

**A CONSOLIDATED REPORT
FOR SIX WORKSHOPS
HELD IN APRIL - JUNE 2000**

PREPARED FOR

**FEDERAL-PROVINCIAL-TERRITORIAL COMMITTEE
ON
ENVIRONMENTAL AND OCCUPATIONAL HEALTH**

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THE TITLE

The front cover title "How to do Health Impact Assessment as a Component of Environmental Assessment" is from the expectations of participants at most workshops on Canadian Handbook for Health Impact Assessment (April - June '00).

AN OVERVIEW OF THE REPORT

1. THE FUNDAMENTAL QUESTION

"How to do Health Impact Assessment as a Component of Environmental Assessment?", is the fundamental question that the Office of Environmental Health Assessment (OEHA) is working on. The Canadian Handbook for Health Impact Assessment is the major output from OEHA and it also deals with this fundamental question. The goal of the handbook is to provide guidelines for health impact assessment as a component of environmental assessment (EA). At present the handbook consists of three volumes; volume-1 contains the rationale for the necessary presence of health sector in the area of environmental assessment, volume-2 focuses on procedures to follow when evaluating the implementation of a project or program in a given region and volume-3 provides a summary of the methodological approaches which are widely used in Canada at the present time.

The preparation of handbook was completed in December 1999 and posted on OEHA's website to facilitate stakeholders and partners to read and implement the handbook for health impact assessment. In April, May and June 2000, six workshops were held at Halifax, Quebec, Ottawa, Toronto, Saskatchewan and Vancouver mainly to gather information on the users' likes, dislikes and desires for further improvement of the handbook. Participation at these workshops were excellent and the participants were found to be highly motivated to obtain and adopt a clear Health Impact Assessment process as a Component of Environmental Assessment.

At all six workshops, participants revealed their likes, dislikes and valuable suggestions for further improvement of different aspects of health impact assessment as contained in separate workshop reports prepared for each workshop. Workshop reports in both English and French are available on OEHA's website. **Participants' expectations, likes, dislikes and suggested improvements in all six workshop reports were tabulated and analyzed to prepare this Consolidated Workshop Report titled "How to do Health Impact Assessment as a component of Environmental Assessment"**

2. PAST EFFORTS TO ANSWER THE FUNDAMENTAL QUESTION

An effort is made in the Chapter - 1 of this report to present historical information on Health Canada's efforts using Health Impact Assessment as a Component of Environmental Assessment. The two subsections; The History and Recent Efforts sections of chapter-1 provide good coverage of all Health Canada efforts in this area. Chapter - 1 indicates that Health Canada initiated works related to health impact assessment as early as 1987, followed by a steady intensification of efforts over the years

with the formation of a principle partner; the Federal, Provincial and Territorial Committee on Environmental and Occupational Health.

As presented in chapter-1, the federal - provincial - territorial committee established a Task Force in 1992 on health impact assessment which in turn prepared a discussion paper. The objectives of the discussion paper were to encourage and provide advice on the incorporation of health in environmental assessment and to promote national consistency on how health is included in environmental assessment. The Task Force on health impact assessment organized a series of six multi-sectoral workshops between the fall of 1995 and the spring of 1996. The objectives of the workshops were to identify and examine the procedures used to incorporate health into EA, as well as identifying current priorities and emerging needs to clarify the role of health professionals in EA. There was consensus at all workshops that guidance material on health impact assessment within EA was required. The works on the preparation of a handbook were started by OEHA and were then completed in three volumes on December 1999.

3. **WORKSHOPS 2000**

Following the completion of handbook in three volumes, the OEHA conducted six regional workshops during April - June 2000 to find the users' likes, dislikes and suggestions in order to strengthened the handbook. Further information on the workshops can be obtained from the chapter-2 of this report and the findings of these workshops are provided in chapters 3, 4, 5, 6, 7 and 8. Chapter-3 of this report contains expectations of the participants, chapter-4 is on the aspects of handbook liked by the participants, chapter-5 presents aspects of handbook not liked by participants, chapter-6 is on the suggestions made by participants for the improvement of the handbook and chapter-7 includes suggestions made by participants for the improvement of sectors such as Agriculture, Forestry, Mining, Energy, Transportation / Communications, Waste Management / Waste Disposal, Sewage / Sludge Management and Manufacturing. Chapter-8 provides suggestions made by participants for the improvement of examples provided in the handbook (Appendix-1, Volume-2).

4. **EXPECTATIONS OF WORKSHOPS PARTICIPANTS**

As presented in chapter-3, the most common expectation in all six workshops was 'to understand HIA and how to do HIA', the second most commonest expectation was 'how to integrate HIA within EA', the third commonest expectation was 'how to integrate sectoral issues into HIA' and the other less common expectations includes expectations such as to find out how to integrate HIA handbook information internationally, to learn First Nations roles in EA process etc. Most expectations of participants were on crucial aspects of health impact assessment and they expected clear answers for their questions.

5. **ASPECTS OF THE HANDBOOK LIKED BY WORKSHOPS PARTICIPANTS**

Aspects of the handbook liked by the participants are contained in chapter-4 of this report. The responses of participants on likes are presented under four groups; group-1 is for the Aspects of Specific Volumes liked by the participants, group-2 is on the aspects of Specific Sectors and Examples liked by participants in all six workshops, Group-3 is on the Specific Contents liked by participants and the last group contains General Aspects liked by participants. According to responses on the aspects liked by participants, it is clear that participants liked many aspects of handbook and this could be considered as a move forward in developing guidance materials for health impact assessment within EA.

6. **ASPECTS OF HANDBOOK NOT LIKED BY WORKSHOPS PARTICIPANTS**

From chapter- 5, it is clear that participants did not like several aspects of the handbook including the lack of answers for the fundamental question on 'How to do HIA'. All participant responses in all six workshops are in fourteen different groups in chapter-5. Many felt that in the handbook there was 'no Clear Process for Doing HIA is presented in the handbook' and in fact this was the most stated dislike of the handbook in all six workshops. The second commonest dislike of handbook in all six workshops was 'Inadequate Information in the handbook on sectors and examples'. Other aspects of handbook disliked by participants include 'Lack of Information in the handbook to Establish the Need for health impact assessment', 'Lack of Mitigation Information in the handbook', 'Lack of Adequate Information in the handbook on human resources', 'Lack of Information in the handbook on cost estimation procedures and resource requirements', 'Lack of Information in the handbook on environmental health concerns', 'Lack of information in the handbook on Linkages of HIA with legislation and regulations', 'Lack of information in the handbook on Proper Integration of human health and environment', 'Inadequate Information in the handbook on data sources and data needs', 'Inadequate Information in the handbook on target audience', 'Lack of Information in the handbook on linkages between HIA and SIA', and 'Lack of Information in the handbook on community involvement / Public Involvement', Questions on the Need for Different Volumes of the handbook and the General Problems for the whole handbook.

7. **SUGGESTIONS MADE BY PARTICIPANTS FOR THE IMPROVEMENT OF HANDBOOK**

All suggestions made by participants in all workshops for the improvement of handbook are grouped to-gather under 17 different aspects of HIA as in Chapter-6 and summarized next:

7.1 **The First Most Common Suggestion Group**

The first most common suggestion group was on "**The Format of the Handbook and the Presentation of Specific Contents in the Handbook**" and this group includes specific suggestions such as; reassess the need for different volumes of the handbook, reorganize the volumes of the handbook, provide definitions of different terms used in the

handbook, improve the presentation of tables, figures & charts, provide a summary handbook (A Quick Reference Guide), must match titles and contents in different chapters of the handbook, improve the type of language used in the handbook, follow the EA process in the layout of chapters in the handbook, update the outdated information in the handbook, provide a detailed Table of Contents and make provisions for the downloading of individual chapters from the website. Please see Section - 6.13 for more information.

7.2 **The Second Most Common Suggestion Group**

The second most common suggestion group as in section 6.8 was “**Establish a Clear Detailed Process in the Handbook for HIA in EIA**” and the specific suggestions in this group includes; provide operational information in the handbook, present a decision tree diagram, connect social issues with HIA, include a tool for HIA in the handbook, provide a process to use determinants of health, incorporate a clear assessment framework for HIA, provide a checklist for do s & don't s, furnish a template that leads us through the entire HIA process, incorporate a set of questions for the process so that answers in lay language could be obtained, provide a process for the integration of HIA with development of policies and programs, supply clear and complete answers in the handbook on ‘how to do health impact assessment’, incorporate a road map to identify issues / expertise and the process to link EA with HIA, provide information on how to monitor and evaluate HIA process, supply information in the handbook on how to assess the resource requirements and the costs of doing HIA, provide information in the handbook on when to use volume-3 and include information in the handbook on where the decision is finally made.

7.3 **The Third Most Common Suggestion Group**

As in Section 6.6, the third most common response group was on the **need for Public Involvement / Community Involvement Guidelines** and the specific responses in this group include suggestions such as; incorporate information on where does community fit into the HIA process, provide pathways for communications with communities, supply information on how governments can learn from communities, incorporate information on how to carry-out public consultation, provide information on how to incorporate all sectors of the public including those without a voice who fall through the cracks, include information on how to get cooperation from all sectors of the public agencies and governments at different levels and discuss a general model for public participation in the handbook.

7.4 **Suggestions Made on The Need to Establish The Required Relationships Between Health and Environment**

As given in Section 6.2, “**Establish the Required Relationship between health and Environmental Assessment**” was another suggestion group which includes specific suggestions such as; write a definition in the handbook that includes human beings, incorporate HIA linkages with EA, specify HIA requirements relevant to EA process,

provide a Tool Box for health professionals regarding the health aspects of EA and make very clear in the handbook that HIA should be a part of environmental assessment and therefore HIA should not appear to stand alone in the handbook.

7.5 **Suggestion Made on the Human Resources Information**

As presented in Section 6.10, **all suggestions pertaining to human resources** are grouped together and this group includes specific suggestions such as; provide information in the handbook on the roles and responsibilities of health professionals, incorporate information in the handbook on the development and implementation of training courses for health professionals, provide information on the roles and responsibilities of health authorities, supply information on 'who starts the HIA process?', provide information on who is responsible for what? when? and how? and provide information in the handbook on expectation of all participants of health impact assessment.

7.6 **Suggestions Made on the Need to Identify Target Audience**

Participants in all six workshops made suggestions on the **need to identify the Target Audience** and the suggestions made by participants on Target Audience are grouped together in Section 6.1. The specific suggestions in this group includes suggestions such as the need to include wide audience, provide all necessary information in the handbook to clearly identify the target audience, incorporate information in the handbook to describe the Target Audience, incorporate variety of groups like town councils and other groups with Target Audience, emphasis all Target Audience in the handbook in addition to health professional, incorporate adequate information on Health Impact Assessment Specialists instead or project managers, expand Target Audience to include EA practitioners, provide definition for the Target Audience in the handbook, provide information to identify the clientele targeted by the handbook and a suggestion by a participant to identify Target Audience at the beginning of each volume.

7.7 **Suggestions Made on the Need for Information on Cost Analysis and Resource Requirements**

All suggestions about the **need for cost analysis information** are grouped together in one group as presented in Section 6.7 and the specific comments in this group include suggestions such as; must provide information in the handbook on the need for cost effectiveness, provide information on the cost of implementation and add details in the handbook on time and resources needed to carry-out health impact assessment along with the availability of such resources.

7.8 **Suggestions Made on the Need to Incorporate Mitigation Information**

There were some suggestions in four workshops on the **need to incorporate Mitigation Information** and all suggestions related to mitigation are grouped together Section 6.9. Specific suggestions in this group include suggestions such as; incorporate Follow-up Procedures needed to minimize the negative effects of projects / programs on human health, provide more information on mitigation aspects in the handbook and furnish information in the handbook on how to make mitigation proposals.

7.9 **Suggestions Made on the Determinants of Health**

In three workshops, suggestion were made on the **Determinants of Health** and all suggestions related to Determinants of Health are grouped together in Section 6.16. Specific suggestions in this group include statements such as; incorporate information on roles & responsibilities of many different professionals in the handbook since Determinants of Health are in different sectors, add two new Determinants of Health namely Gender & Culture and provide information in the handbook on 'How to Prioritize the Determinants of Health'.

7.10 **Suggestions Made on the Improvement of Database in the Handbook**

Database for Health Impact Assessment is another suggestion group in Section 6.11 and this group includes specific suggestions such as; must group the relevant information in the handbook under technical, social, economic etc, provide more information on trade-offs, incorporate a detail list of relevant data sources in the handbook, provide information in the handbook for predictions, make provisions in the handbook to update information & references in an on-going basis, incorporate information from different regions of Canada, add information in the handbook on how to avoid bias in relation to HIA Officers and the last suggestion was to establish a process for centralized database.

7.11 **Suggestions Made on the Need Analysis for Health Impact Assessment**

There were suggestions from Ottawa and Regina workshops on the need to incorporate information on the **Need Analysis for Health Impact Assessment** and the specific suggestions made by the participants include; add information in the handbook on 'when HIA tool should be used and when should not be used?', furnish a Method in the handbook so that it is possible to use that method to decide 'when to do HIA?', and the last suggestion was to provide a trigger mechanism in the handbook for HIA in EA. Please see Section-6.15 for more information.

7.12 **Suggestions Made on the Linkages of HIA with Legislation and Regulations**

At Regina and Ottawa workshops, some participants made suggestions **to establish clear linkages between HIA and legislation & regulations as in Section 6.4**. Specific suggestions in this group include statements of facts such as: supply HIA linkages with health related legislation (Regina), provide health legislation from different levels of

government could be clearly stated (Regina) and the last statement of fact was to include all required information regarding regulations, legislation and directives (Ottawa).

7.13 **Suggestions Made on the Linkages of HIA with SIA and other Processes**

Some participants at Toronto, Ottawa and Vancouver workshops indicated the **need to clearly link HIA with SIA** and the specific suggestions (section 6.5) include statements of facts such as; the handbook is not clear on whether SIA is separate from HIA and therefore it is important to establish clear linkages between SIA and HIA (Toronto), if SIA is part of HIA then it is important to show that specific linkage (Toronto), provide the links between volume-2 of the handbook and environmental assessment (Ottawa), incorporate linkages of all three volumes (Ottawa) and the last statement of fact was on the need to link HIA with Occupational Health and Safety (Vancouver).

7.14 **Need for Information on the Environmental Health Concerns**

There were suggestions from Toronto and Ottawa participants that the **handbook should provide information on the environmental health concerns in Canada** (Section 6.3) and the specific suggestions in this group include statements of facts such as; provide information on the common environmental health concerns in Canada (Toronto) and the second statement was on the need to avoid separation of man from his environment in the handbook (Ottawa).

7.15 **Reassessment of the Need for Different Volumes of the Handbook**

Participants at the Toronto workshop clearly indicated that **volume-3 should be reassessed**. The specific suggestions by participants include statements such as; it is imperative to assess whether volume-3 is helpful or not, the particular need for volume-3 is questionable, need for volume-3 of the handbook should be assessed and the last statement in this group was that the volume-3 could be titled as 'back grounder' for health professionals. Please see Section - 6.12 for more detail.

7.16 **General Suggestions for the Whole Handbook**

An effort is made under "**General Suggestions**" to bring to-gather all suggestions **which were in relation to overall handbook and the overall HIA process**. Important statements of facts in this suggestion group include statements such as; amount of information in the handbook may cause "paralysis", the handbook is very long and daunting, language used in the handbook should be improved, titles for chapters and volumes should be made to match the contents, need to link different volumes of the handbook and a suggestion to rewrite the handbook. Please see Section-6.14 for all statements by participants in all workshops.

7.17 **Suggestions for the Promotion of HIA Handbook**

Once all the above suggestions are included in the handbook, the new improved handbook should be promoted (please see Section 6.17) to realize the adoption of handbook and towards this goal, participants at Quebec City workshop made suggestions

such as; promote the handbook more and present them more to health and environmental assessment practitioners and to make the PowerPoint presentation (Appendix-C) available on an official website.

8. **SUGGESTIONS MADE ON THE SECTORAL PRESENTATIONS IN THE HANDBOOK**

In all workshops except Ottawa, suggestions were made by participants pertaining to information in the handbook on **Sectors** and the specific comments include suggestions such as; provide more references for information on sectors, include information on collaborative works with other Departments such as Natural Resources Canada for information on different sectors, provide complete analysis of all sectors in the handbook, add new sectors in the handbook such as Nuclear Sector and Infra Structural Sector, provide more analysis of each sector by integrating Determinants of Health, include health related database for different sectors, provide all acts and regulations for all sectors, establish all standards and specifications for all sectors and include social impacts for different sectors. Further suggestions on different sectors are provided in Chapter-7 and these sectors include Agriculture, Forestry, Mining, Energy, Transportation / Communication, Waste Management / Waste Disposal, Sewage / Sludge Management and Manufacturing.

9. **SUGGESTIONS MADE BY PARTICIPANTS ON IMPROVING THE PRESENTATION OF EXAMPLES**

Finally, the chapter-8 brings together suggestions by participants in all workshops on **improving the presentations of examples in handbook** and the specific suggestions include; provide more information for each example by using a specific method to conduct health impact assessment, add more information for examples on the application of Determinants of health, add examples on Uranium Mines and Potash Mines, increase the number of examples in all sectors, include information on international examples, municipal examples & household examples, adopt a consistent format for all examples, include information on Social Impact Assessments for all examples, provide information for examples on Benefit / Cost analysis to facilitate decision making and add information for examples on the monitoring and evaluation activities to improve Health Impact Assessment in Environmental Assessment.

Additional suggestions made by participants in all workshops include the need for more analysis on the Loss of Culture and Social Values due to projects & programs, analysis of impacts of off reserve projects on reserve and vice-versa, add information on the use of this handbook by First Nations, add information on acts & regulations and present all available information on standards and specification for hazards on the website.

10. **CONCLUSION**

Most participants expected a clear answer for their fundamental question on "How to Do Health Impact Assessment as a Component of Environmental Assessment". Although, the participants liked many aspects of the handbook as presented in Chapter-4, they did not like fourteen different but related aspects of HIA in the handbook. As presented in Chapter-6, participants at all workshops provided valuable suggestions for the improvements of all fourteen aspects which they disliked plus three more aspects of HIA in the handbook. Hence, improvements should be made on all seventeen aspects of HIA in the handbook by using the valuable suggestions provided by the participants at all workshops. Making improvements on all seventeen aspects will undoubtedly involve a complete redesign and rewrite of the handbook.

Participants further provided valuable suggestions for the improvements of sectors and examples in the handbook as presented in Chapter-7 and Chapter-8 respectively. Making improvements on sectors, examples and HIA through a complete redesign and rewrite of the handbook, would enhance the adoption of handbook and minimize the negative effects of projects, programs and policies on human health.

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ABBREVIATIONS

- HIA - Health Impact Assessment
EA - Environmental Assessment
SIA - Social Impact Assessment
OEHA - Office for Environmental Health Impact Assessment

CHAPTER - 1 **INTRODUCTION**

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1.1 THE HISTORY

During the period between 1987 and 1990, a series of workshops were held dealing with the role of health in environmental assessment. These workshops were organized by the Canadian Environmental Assessment Research Council, the Canadian Environmental Assessment Agency (previously the Federal Environmental assessment Review Office), Health Canada and several other co-sponsoring organizations. These workshops recommended that the role of health in environmental assessment should be strengthened in Canada and that guidance material on how to include health in environmental assessment should be developed.

In 1992, the Federal, Provincial, Territorial Committee on Environmental and Occupational Health established a Task Force on Health Impact Assessment. The mandate of the Task Force was:

- To provide advice, share information and foster communication among federal, provincial and territorial agencies, industry, universities and consultants on Health Impact Assessment (HIA)
- To encourage coordination and harmonization of approaches to HIA.
- To improve awareness of the linkages among environmental, socio-economic, cultural and human health effects.
- To carry-out workshops to address specific information exchange needs on HIA
- To assess the need for a registry of databases on HIA

The Task Force decided to act on the recommendations of the earlier workshops and to prepare a discussion paper on a national guide on health and environmental assessment. The two main objectives of the discussion paper were:

- to encourage and provide advice on the incorporation of health in environmental assessment; and
- to promote national consistency in how health is included in environmental assessment, while recognizing the diversity of Canadian EA legislation and regional differences

After the preparation of the discussion paper and its review by the Committee on Environmental and Occupational Health, the Task Force on Health Impact Assessment organized a series of six multi-sectoral regional workshops between the fall of 1995 and the spring of 1996. Copies of the Task Force's discussion paper were distributed to all invitees in advance, together with a pre-workshop background paper and a questionnaire.

The objectives of workshops were:

- to consider the approaches, procedures and methods used to incorporate health into EA
- to examine the factors that facilitate the integration of health into EA
- to identify current priorities and emerging needs to further clarify the role of health professionals in EA

Following all six workshops in June 1996, a draft guide entitled **The Role of Health Professionals in Environmental Assessment - Consolidated Workshop Proceeding** was prepared.

1.2 **RECENT EFFORTS**

There was a consensus at all of the workshops during 1995 and 1996, that guidance material on Health Impact Assessment within EA is needed in Canada and that it should include advice on assessing effects on socio-cultural health, occupational health and physical health.

It was decided that more than one volume would be needed to meet these requirements of stakeholders and hence a Handbook for Health Impact Assessment was prepared in three volumes. Volume-1 focused on the need for and the components of HIA within EA, volume- 2 focused on the procedures to follow when evaluating a project or program in a given region, and volume-3 provided information on the roles for health professionals.

Volume-1, the basics presents the nature and necessity of incorporating health into environmental assessment within 7 chapters. Chapter-1 and 2 introduce the basic

concepts inherent to health and environmental assessment and lay the ground work for the remainder of the Handbook. Chapter-3 discusses environmental health indicators as valuable tools to assess and predict the impacts of projects. Chapter-4 examines EA within a Canadian context by providing an overview of Canadian federal and provincial legislation and regulations. Chapter-5 deals with Aboriginal health and examines the concepts of traditional knowledge. Chapter-6 takes a peek at EA on an international level and finally, Chapter-7 looks at the future challenges that lie ahead and the necessity to effectively incorporate health considerations into EA. The underlying theme of all of the chapters is that full health considerations need to be incorporated into the EA of projects.

Volume-2 entitled 'Decision Making in Environmental Health Impact Assessment' which is a draft presently focuses on the following five sections:

- the role of health sector in EA (Chapter-2)
- sustainable development as a framework for integrating risks and benefits to public health (Chapter-3)
- an analysis of the data on health risks (Chapter-4)
- the integration of a public health approach in developing public notices and public health interventions in EA (Chapter-5)
- the development of a process for communicating with the public (Chapter-6)

Contents of volume-3 are entitled as shown next:

- **Chapter-A:** Values, Health and Environmental Assessments
- **Chapter-B:** The Risk Management Decision Making Process
- **Chapter-C:** Social Impact Assessment Approaches in Environmental Impact Assessment Protocols: A Social Science Perspective
- **Chapter-D:** Human Health Evaluation in Environmental Assessment
- **Chapter-E:** Methodologies for Technological Risk Assessment
- **Chapter-F:** Public Health Integration in EA
- **Chapter-G:** Bio-statistical Concepts and Method
- **Chapter-H:** Role of Occupational Hygienist within EA
- **Chapter-I:** The contribution of Economics to the Environmental Valuation Process

Volume-1 is considered as complete as it underwent extreme consultation in 1995 / 1996 while volumes 2 and 3 are considered drafts and remains the subject of current round of consultation. All 3 volumes are available in the OEHA website:

English: <http://www.hc-sc.gc.ca/oeha>
French: <http://www.hc-sc.gc.ca/behm>

CHAPTER - 2

WORKSHOPS 2000

In May and June 2000, Office of Environmental Health Assessment, Health Canada conducted five multi-stakeholder regional workshops in Halifax, Quebec City, Toronto, Regina and Vancouver and one federal workshop in Ottawa. All participants of the workshop were informed about the availability of Handbook on Internet in advance to assure maximum participation. Lists of participants for all six workshops are in Appendix-A.

2.1 OBJECTIVES OF WORKSHOPS 2000

The objectives of all workshops were as listed next:

- To gather constructive comments on how to make Volume 2 & 3 of the draft handbook a better resource in supporting the integration of Health Impact Assessment (HIA) in Environmental Assessment (EA).
- To inform participants of the status of the initiative to produce a Canadian handbook on health impact assessment and next steps to be taken to finalize the handbook

There was an additional objective for the Workshop in Ottawa and it was to find out whether or not the Handbook assists federal departments in their application of Canadian Environmental Assessment Act (CEAA), since the Workshop in Ottawa was restricted to

federal departments.

2.2 **AGENDA FOR ALL WORKSHOPS**

Each workshop was for a day and the agenda was similar for all workshops. Main items of the agenda for each workshop were:

- **Arrival and Coffee**
- **Welcome and Introductions**
 - Workshop objectives
 - Participants expectations
 - Overview of agenda
- **Setting the Scene**
 - Background
 - Determinants of Health
 - Overview of Volumes 1, 2 and 3
 - Questions of Clarification
- **Explanations for Working Sessions**
- **COFFEE**
- **Working Session**

This session was focused on gathering comments on the overall effectiveness of the Handbook by answering the questions on volumes 2 and 3 as follows:

 - What do you like about volumes 2 and 3 and why?
 - What do you dislike about volumes 2 and 3? and why
 - How would you improve volumes 2 and 3?
- **Reports Back in Plenary**
- **LUNCH**
- **Working Session**

In each workshop, the discussion was focused on answering the question:

Does the information provided within the appendix-1 of volume-2 (eg. Agriculture, Forestry, Mining, Energy, Transportation, Communication, Waste Management, Waste Disposal, Sewage, Sludge Management and Manufacturing) facilitate the integration of health considerations into the environmental assessment of a proposal.
- **COFFEE**

- **Each Group Reports Back in Plenary**
- **Next Steps / Evaluation**
- **Close**

2.3 **SETTING THE SCENE BY MR. ROY KWIATKOWSKI AND DR. PIERRE GOSSELIN**

Setting the Scene item of the workshop was to inform and or refresh 'workshopping' aspects such as background info, determinants of health, overview of volumes 1, 2 and 3 and points of clarification as required by participants. Presentations by Mr. Roy Kwiatkowski and Dr. Pierre Gosselin are available in Appendix-C of this report.

2.4 **WORK SESSIONS AT THE WORKSHOPS**

At all workshops, the morning work session was on gathering comments on the effectiveness of the handbook in general by means of the following questions:

- What do you like about Volumes 1 and 3 and why?
- What do you dislike about Volumes 2 and 3 and why?
- How would you improve Volumes 2 and 3?

The after-noon work session in all workshops except Ottawa was on the analysis of all sectors available in the Volume-2, Appendix-1. For each sector, the analysis was to answer the question:

"Does the information provided on eg. manufacturing facilitate the integration of health considerations into environmental assessment of a proposal."

In Ottawa workshop, the after-noon session was on the analysis of all chapters in Volume-2. The outcomes of both work sessions are presented in the rest of chapters of this report.

Participants at Toronto Workshop requested information on CEOH members and hence a list of members with contact information are available in Appendix-B of this report.

CHAPTER - 3

EXPECTATIONS OF PARTICIPANTS

FROM THE WORKSHOPS

At the beginning of all six workshops 2000, participants were asked about their expectation / expectations from workshops and the answers were recorded. Some participants had common expectation / expectations while others had a range of expectation / expectations. Answers from participants at all six workshops are provided next:

3.1. Most Common Expectation:

“To understand HIA and how to do HIA” was the most common expectation among participants in all six Regional Workshops and the specific wordings of this expectation had variations in all workshops as depicted next:

- to learn the mechanism to conduct HIA within EA
- to learn how to use the HIA process
- to learn
- to find out how to carry-out HIA process
- to find out how to use the HIA Handbook
- to find out how to implement HIA process
- to get information on how to do HIA

- to understand how HIA Handbook works
- to observe HIA process
- to learn the HIA tool to help First Nations
- to understand the roles and responsibilities of Health Canada regarding HIA
- to obtain a process so that it is possible to undertake Occupational Health Impact Assessment
- to understand how to assess the implications of climate change and transportation on health
- to clarify certain areas of HIA process
- to learn about HIA and to provide advice to others
- learning HIA (examining the guide) and listening

3.2 **Second Most Common Expectation:**

The next commonest expectation was "how to integrate HIA with EA" and the wordings in all six workshops were:

- to find out how to link HIA and EA
- to understand how HIA could be integrated with EA
- to understand how to link current provincial EA with HIA
- to comment on Handbook and find out how health can be integrated in EA
- to find out how air quality issues can be integrated into HIA
- to find out how First Nations off reserve impacts (social / biophysical) can be integrated into HIA
- checking whether the tool could be integrated into the regular procedures and whether it could enhance the work done
- obtaining the information and discussing the issues connected with integration of health into environmental assessment

3.3 **Third Commonest Expectation:**

The third commonest expectation was "how to integrate sectoral issues into HIA" and the specific wordings were as given below:

- to understand how to integrate sectoral issues into HIA
- to find out how sectoral issues can be integrated into HIA
- to understand how different sectors could be integrated with EA

3.4 **Less Common Expectation:**

Other less common expectations were as given below:

- to take back information to participants' departments
- to develop HIA process and operationalise HIA
- interested in HIA
- to influence the practical application of HIA

- to find out how to integrate HIA Handbook information internationally
- to obtain ideas for fine tuning of our own process
- to learn First Nations role in EA process
- to find out how to fit communities in HIA
- *to compare this HIA process with other processes*
- thinking about how to make this information more available

CHAPTER - 4

ASPECTS OF HIA HANDBOOK LIKED BY PARTICIPANTS IN ALL SIX WORKSHOPS

After obtaining the responses regarding participants' expectations, the participants in all six workshops were asked about the aspects of handbook liked by them. This question was asked while participants were in groups or in the whole audience. The participants responded with wide ranging answers covering range of aspects such as General Aspects, Specific Volumes, Sectors and Examples and Specific Contents. Lists of answers provided by participants at all workshops were as provided in 4.1, 4.2, 4.3 and 4.4.

4.1 ASPECTS OF SPECIFIC VOLUMES LIKED BY PARTICIPANTS

- volume-3 goes a long way to explain the issues and analysis (Toronto Workshop)
- volume-3 does a good job of describing concepts that health professionals can bring to EA (Toronto Workshop)

- volume-3 does not presents itself as a definitive authority on any section, but does not state this specifically (Vancouver Workshop)
- volume-3 is more practical (Regina Workshop)
- volumes 2 & 3 provide concise and well thought direction and guidance to help those who have to work in this arena to do their jobs (Regina Workshop)
- numbers in volume-3 and the explanation of acceptable risks are good (Regina Workshop)
- in volume-2, the subject matters are clearly communicated (Regina Workshop)

4.2 **ASPECTS OF SECTORS AND EXAMPLES LIKED BY PARTICIPANTS**

- charts and tables integrate the information well (Quebec City Workshop)
- practical cases are well prepared (Quebec City Workshop)
- Sectoral approach is very useful (Ottawa Workshop)
- in volume-2, appendix-1, the whole appendix provides badly needed information (Ottawa Workshop)
- in volume-2, appendix-1 is very useful (Ottawa Workshop)
- sectoral information is very useful (Regina Workshop)
- likes appendix-1 in volume-2, because it is broken down by projects and identify issues (Vancouver Workshop)
- appendix-1 is a good start at identification of impacts and add to it over time. (Vancouver Workshop)
- examples in appendix-1, volume-2 is good (Toronto Workshop)
- like the examples in Handbook (Toronto Workshop)

4.3 **ASPECTS OF SPECIFIC CONTENTS LIKED BY PARTICIPANTS**

- likes the way the Target Audience is expressed (Toronto Workshop)
- likes the site specific solutions (Toronto Workshop)
- it is useful to learn about social impact analysis (Toronto Workshop)
- values, health and environment assessment chapter is very interesting and absolutely critical (Toronto Workshop)
- good examples are given for socio-economic issues (Toronto Workshop)
- likes the site specific solutions in the Handbook (Toronto Workshop)
- matrixes at pages 49 and 50 are helpful (Vancouver Workshop)
- there are good reference sources (Vancouver Workshop)
- inclusion of Quality of Life Component is good (Vancouver Workshop)
- likes the chapters C, D, H & I (Vancouver Workshop)
- use of Determinants of Health in the Handbook is very useful (Vancouver Workshop)
- tables given in the Handbook are good for use in our communities (Halifax Workshop)
- discussion of values are very useful (Halifax Workshop)

- likes the inclusion of traditional knowledge in the Handbook (Halifax Workshop)
- wide range of health issues are incorporated in the Handbook (Regina Workshop)
- health professionals can look for information outside the biophysical and regulatory health issues (Regina Workshop)
- like the grids in appendix-1, volume-2 (Regina Workshop)
- there is a good effort in the Handbook to focus on sustainable development (Regina Workshop)
- likes the breakdown by activities (Ottawa Workshop)
- tables are just great in providing lot of information (Ottawa Workshop)
- useful references are provided in the Handbook (Ottawa Workshop)

4.4 **GENERAL ASPECTS LIKED BY PARTICIPANTS**

- the multi-disciplinary and comprehensive handling of issues in the handbook (Quebec City Workshop)
- written in an accessible fashion (Quebec city Workshop)
- information in the Handbook would facilitate the integration of health aspects into environmental assessment (Quebec City Workshop)
- PowerPoint presentation provides a synthesis of the issues (Quebec City Workshop)
- is a helpful tool (Ottawa Workshop)
- useful when health professionals begin to do HIA (Ottawa Workshop)
- a good reference document (Regina Workshop)
- this Handbook puts everyone in a level playing field (Regina Workshop)
- this Handbook is comprehensive (Halifax Workshop)
- all 3 volumes provide a good knowledge of health in relation to our environment (Halifax Workshop)
- easy to read (Halifax Workshop)
- this Handbook illustrates great progress (Halifax Workshop)
- content is rich, concise and jargon free (Vancouver Workshop)
- very extensive presentation (Vancouver Workshop)
- seems fairly complete (Vancouver Workshop)
- great deal of information (Vancouver Workshop)
- this is a good goal to integrate health and environment (Vancouver Workshop)
- clear, well written and accurate (Vancouver Workshop)
- concept is good, but needs explanation (Vancouver Workshop)
- this Handbook is a good cornerstone information for HIA practitioners who need to understand scope / role and for outsiders to see (Vancouver Workshop)
- it is easy to understand the roles pertaining to HIA (Toronto Workshop)
- the layout of the Handbook facilitates easy understanding of the concepts (Toronto Workshop)
- language is structured well to enable easy understanding (Toronto workshop)
- there is a good effort to bring together various groups such as EA groups and HIA

- groups (Toronto Workshop)
- language is too easy to read (Toronto workshop)

CHAPTER - 5

ASPECTS OF HANDBOOK NOT LIKED BY PARTICIPANTS IN ALL SIX WORKSHOPS

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Although the participants in all workshops liked many aspects of HIA in the handbook, they did not like fourteen different aspects of HIA including the lack of fundamental aspects in the handbook . Responses of participants are classified to these 14 different but related aspects of HIA in the handbook as presented next:

5.1 INADEQUATE INFORMATION ON TARGET AUDIENCE

- description of target audience is not clear (Toronto Workshop)

- audience of this material is not well defined (Vancouver Workshop)
- the handbook did not clarify target audience (Vancouver Workshop)
- audience is not fully defined in the handbook (Vancouver Workshop)
- there is some confusion about target audience (Regina Workshop)
- this handbook could have been directed at a larger audience (Halifax Workshop)
- the handbook overemphasis on health professionals , but not on other target audiences which include EA practitioners among other groups (Ottawa Workshop)

5.2 **LACK OF PROPER INTEGRATION OF HUMAN HEALTH AND ENVIRONMENT**

- examples in the handbook do not include HIA linkages to EAs conducted in the past and present (Toronto workshop)
- there is no clear presentation on how the current environmental assessment be changed to include broader determinants of health (Regina Workshop)
- lack of clear information on HIA linkages with EA (Halifax Workshop)
- links between this handbook and EA are not clear (Ottawa Workshop)
- there is no information on how health professionals fit into EA team (Ottawa Workshop)
- the handbook does not specify HIA requirements relevant to EA process (Toronto Workshop)

5.3 **LACK OF INFORMATION ON ENVIRONMENTAL HEALTH CONCERNS**

- the handbook does not provide information on the common environmental health concerns in Canada (Toronto Workshop)
- human health issues are not properly addressed (Toronto Workshop)
- correct health standards are not properly established (Toronto workshop)

5.4 **LACK OF PROPER LINKAGES OF HIA WITH LEGISLATION AND REGULATIONS**

- does not establish links with related legislation and regulations (Toronto Workshop)
- review of Canada's legislation has inaccuracies (Ottawa Workshop)
- this handbook is not systematic in reference to legislation, regulations, directives and guidelines (Ottawa Workshop)

5.5 **LACK OF LINKAGES BETWEEN HIA AND SIA**

- social impacts on health are missing (Toronto Workshop)
- the handbook is not clear on whether Social Impact Assessment (SIA) is separate

- from HIA (Toronto Workshop)
- if SIA is part of HIA, then it is important to show that linkage (Toronto Workshop)
- there is no clear identification of SIA issues and HIA issues (Toronto Workshop)

5.6 **LACK OF INFORMATION ON COMMUNITY INVOLVEMENT / PUBLIC INVOLVEMENT**

- not enough tools for community involvement (Halifax Workshop)
- there is no information on community involvement (Halifax Workshop)
- how to consult the public is not detailed enough (Quebec Workshop)

5.7 **LACK OF INFORMATION ON COST ESTIMATION AND RESOURCE REQUIREMENTS**

- resource requirements and availabilities are not discussed in the handbook (Toronto Workshop)
- cost of implementation is not available (Ottawa Workshop)
- cost information is not provided in the handbook (Ottawa Workshop)

5.8 **NO CLEAR PROCESS FOR HEALTH IMPACT ASSESSMENT**

- the handbook does not provide information on how to do HIA (Toronto Workshop)
- there is no information on the monitoring and evaluation of HIA process (Toronto Workshop)
- the handbook does not recognize stages in EA process (Toronto Workshop)
- volume-2 is supposed to provide the "how", but that "how" is not there in the handbook (Vancouver Workshop)
- the required decision making process is not clearly given in the handbook (Regina Workshop)
- operational element is not clear in the handbook. ie. Tools on "flow to" are missing (Regina Workshop)
- there is no clear assessment framework for health impacts (Halifax Workshop)
- HIA is described at project level and not at program level in this handbook (Ottawa Workshop)
- the 'how' is not very well outlined in this document. Eg., How does a project officer apply HIA (Ottawa Workshop)

5.9 **LACK OF MITIGATION INFORMATION**

- lack of information on mitigation options (Toronto Workshop)
- mitigation aspects are not available in the handbook (Toronto Workshop)
- incorrect statement on page-102 about mitigation of noise (Ottawa Workshop)

5.10 **LACK OF ADEQUATE HUMAN RESOURCES INFORMATION**

- the roles and responsibilities of health authorities are not clear in the handbook (Toronto Workshop)
- there is lack of clarity on the role of health professionals (Regina Workshop)
- it is hard to know from the handbook on questions such as: Who is responsible for What?, When? and How? (Regina Workshop)
- there is a general lack of clarity on the roles of health professionals (Halifax Workshop)

5.11 **INADEQUATE INFORMATION ON DATA SOURCES AND DATA NEEDS**

- lack of adequate informational references from sectors (Vancouver Workshop)
- it appears that volumes 2 & 3 relies heavily on a single set of data from a single source (Regina Workshop)
- no provision for a centralized database
- the handbook does not answer the questions such as 'where do you go for further information?' I.e. Sources of information are missing (Halifax Workshop)

5.12 **PROBLEMS ON THE NEED FOR DIFFERENT VOLUMES OF HANDBOOK**

- volume-3 is not helpful (Toronto Workshop)
- many issues are raised in volume-3, but lacks direction (Toronto Workshop)
- the particular need for volume-3 is questionable (Toronto Workshop)
- if volume-3 is required, it could be titled as "Back Grounder" for health professionals (Toronto Workshop)

5.13 **UNCLEAR ON SPECIFIC CONTENTS AND FORMAT OF THE HANDBOOK**

- does not provide definition of terms used in the handbook (Toronto Workshop)
- land use issues are missing in the handbook (Toronto Workshop)
- lack of clear definitions on what we meant by some terms in the handbook (Ottawa Workshop)
- Sustainable Development (SD) is interesting. But not pertinent to HIA / EA practitioners (Ottawa Workshop)

5.14 **GENERAL PROBLEMS WITH THE WHOLE HANDBOOK**

- amount of information in the handbook may cause "paralysis" (Regina Workshop)
- the handbook is theoretical (Toronto Workshop)
- the handbook is too long (Vancouver Workshop)
- information in volume-2 is not current (Vancouver Workshop)

- there is no information in the handbook on "where will Guidelines ultimately be used" (Vancouver Workshop)
- the Handbook looks like more of a textbook instead of a handy "handbook" for quick reference (Halifax Workshop)
- the Handbook does not answer the question on how to use HIA as a part of developing strategic policies (Halifax Workshop)
- this handbook is not specific enough for EA practitioners (Ottawa Workshop)
- since the roles and responsibilities of EA practitioners are not clear in the handbook, there is a need for another volume (may be a volume-3) for EA practitioners (please be brief to about 20 pages) (Ottawa Workshop)
- titles do not match contents in many sections (Ottawa Workshop)
- volume-2 is not linked to volume-3 (Ottawa Workshop)
- titles in this handbook are not along guidelines (Ottawa Workshop)
- follow general EA process in the layout of chapters (Ottawa Workshop)
- does not address questions such as 'When to use volume-3?' etc. (Ottawa Workshop)
- the mere size of the document itself (several hundred pages) discourages its reading (Quebec Workshop)
- social impacts are not included in the handbook (Quebec Workshop)
- insufficient attention is paid to psychological health and diet (Quebec Workshop)
- language used in the handbook is too academic (Ottawa Workshop)

CHAPTER - 6

SUGGESTIONS MADE BY PARTICIPANTS IN ALL SIX WORKSHOPS FOR THE IMPROVEMENT OF CANADIAN HANDBOOK FOR HEALTH IMPACT ASSESSMENT

During the first breakout session of the workshops, participants in all workshops were

requested to provide their suggestions for the improvement of HIA handbook. Responses of participants in all workshops were organized under 17 HIA aspects as presented next:

6.1 **THE TARGET AUDIENCE IN THE HANDBOOK**

- must identify the clientele targeted by the handbook (Quebec City Workshop)
- this Handbook should be made to include wide audience (Halifax Workshop)
- identify target audience at the beginning of each volume (Vancouver Workshop)
- audience of this material is not well defined (Vancouver Workshop)
- should expand and clarify target audience (be sensitive to cultural differences) (Vancouver Workshop)
- edit this volume to include target audience and roadmap (Vancouver Workshop)
- should fully define the audience of this Handbook (Vancouver Workshop)
- description of target audience should be made clear (Toronto Workshop)
- target audience could incorporate variety of groups including town councils, different types of organizations etc. (Regina Workshop)
- there is emphasis on health professionals, but not on other target audiences and therefore the contents of the Handbook should be made to reflect all target audiences which include EA practitioners among other groups (Ottawa Workshop)
- in volume-2, chapter-4, too much information for project managers, but not enough information for Health Impact Assessment Specialists and therefore it is imperative to provide information on all target audiences (Ottawa Workshop)
- in volume-2, chapter-1, expand target audiences to cover EA practitioners (Ottawa Workshop)

6.2 **INTEGRATION OF HUMAN HEALTH AND ENVIRONMENT**

- write a definition for the environment that includes human beings (Quebec City Workshop)
- the definition of environment should include human beings (Quebec City Workshop)
- there should be a forceful message in the Handbook that health should be an important part of EA (Halifax Workshop)
- clear information on the HIA linkages with EA should be provided in the Handbook (Halifax Workshop)
- HIA is a part of a whole Environmental Assessment Team and should not appear to stand alone in the Handbook (Vancouver Workshop)
- the Handbook should be made to specify HIA requirements relevant to EA process (Toronto Workshop)
- examples in the Handbook should include HIA linkages to EAs conducted in the past and present (Toronto Workshop)
- emphasis that health is part of a multi-discipline team for EA (Regina Workshop)
- provide a Tool Box for health professionals regarding the health aspects of EA

6.3 **NEED FOR INFORMATION ON THE ENVIRONMENTAL HEALTH CONCERNS**

- it is very important that the handbook is made to provide information on the common environmental health concerns in Canada (Toronto Workshop)
- in volume-2, chapter-5, page-54 separates the man from his environment and this should be avoided (Ottawa Workshop)

6.4 **LINKAGES OF HIA WITH LEGISLATION AND REGULATIONS**

- useful to present HIA linkages with health related legislation (Regina Workshop)
- health legislation from different levels of government could be clearly stated (Regina Workshop)
- the Handbook should essentially include all required information regarding regulations, legislation and directives (Ottawa Workshop)

6.5 **LINKAGES OF HIA WITH SIA AND OTHER PROCESSES**

- is not clear whether Social Impact Assessment (SIA) is separate from HIA and therefore it is important to establish clear linkages between SIA and HIA (Toronto Workshop)
- if SIA is part of HIA, then it is important to show that specific linkage (Toronto Workshop)
- links between volume-2 and environmental assessment should be provided (Ottawa Workshop)
- linkages of all three volumes should be presented (Ottawa Workshop)
- Occupational Health and Safety needs to be linked (incorporate targets and thresholds as with bio-physical assessments) (Vancouver Workshop)

6.6 **PUBLIC INVOLVEMENT / COMMUNITY INVOLVEMENT GUIDELINES IN THE HANDBOOK**

- discuss a general model for public participation (Quebec City Workshop)
- need information on where does community fit into the HIA process (Halifax Workshop)
- the Handbook should provide pathways for communication with communities (Halifax Workshop)
- the Handbook should provide information on "how governments can learn from communities?" in the same way our private sector learns from communities (Halifax Workshop)
- need more information in the Handbook to help decide on the appropriate level of

- involvement by health authorities (Halifax Workshop)
- need information in the Handbook in relation to "how to carry-out public consultation" (Halifax Workshop)
- information on community involvement should be provided (Halifax Workshop)
- it is important to include information on how to include all sectors of the public including those "without a voice" who fall through the cracks (Regina Workshop)
- incorporate details on how to get cooperation from all sectors of the public, agencies and governments at different levels (stop trying to think "keep our jobs") (Regina Workshop)
- in volume-2, chapter-2, public involvement / community involvement can also be a criteria (Ottawa Workshop)
- in volume-2, chapter-2, page-11, public participation can be included (Ottawa Workshop)

6.7 **COST ANALYSIS FOR HEALTH IMPACT ASSESSMENT IN THE HANDBOOK**

- information on costs of HIA should be provided so that it is possible to estimate the costs of doing HIA (Ottawa Workshop)
- cost effectiveness unclear in this Handbook and hence cost related information should be provided in the Handbook (Ottawa Workshop)
- cost information is required on the proposed activities (Ottawa Workshop)
- information on the cost of implementation should be provided (Ottawa Workshop)
- time and resources to do HIA should be provided (Ottawa Workshop)
- costs of HIA should be provided (Ottawa Workshop)
- cost estimation details should be provided (Regina Workshop)
- resource requirements and availability should be clearly discussed in the Handbook (Regina Workshop)

6.8 **ESTABLISHMENT OF A CLEAR DETAILED PROCESS IN THE HANDBOOK TO CARRY-OUT HEALTH IMPACT ASSESSMENT**

- should have a more "operational" part (Quebec City Workshop)
- must provide a decision tree diagram (criteria for taking health into account) (Quebec City Workshop)
- provide a table on social impacts and place it first to make it stand out (Quebec City Workshop)
- the public perception and the social impacts often take more importance in a project (Quebec City Workshop)
- need a tool to do health impact assessment (Halifax Workshop)
- it is useful to provide a process to use Determinants of Health for health impact assessment (Halifax Workshop)

- clear assessment framework for health impacts should be provided (Halifax Workshop)
- it is useful to provide a Checklist for DO s and DON'T s (Halifax Workshop)
- need a template that leads us through the entire HIA process (Halifax Workshop)
- need a set of questions for the process so that answers in lay language could be obtained to relate risks to something that an individual knows (Halifax Workshop)
- the Handbook should be made to answer the question on how to use HIA as a part of developing strategic policies
- there is no clear information in the Handbook on how to do health impact assessment (Vancouver Workshop)
- volume-2 is supposed to provide the "How", but that "How" is not clear in this volume (Vancouver Workshop)
- need a Road Map to identify the issues / expertise and the process to link EA and HIA (Vancouver Workshop)
- should provide information in the Handbook on "How to do a health impact assessment" (Vancouver Workshop)
- add information in the Handbook so that volume-3 could be connected to the Road Map (Vancouver Workshop)
- the Handbook does not provide information on how to do health impact assessment and hence it is suggested that the Handbook should be made to provide a detail process to carry-out health impact assessment (Toronto Workshop)
- the Handbook should provide information on the monitoring and evaluation of HIA process (Toronto Workshop)
- the Handbook need to provide information on the monitoring of Human Side of Ecosystems (Toronto Workshop)
- the Handbook should be made to recognize the stages in EA process (Toronto Workshop)
- clear directions should be provided to all issues raised in volume-3 (Toronto Workshop)
- there is a need to answer the required level of assessment under different situations (Regina Workshop)
- there is a need to provide information on how to do health impact assessment (Regina Workshop)
- the Handbook could provide information on the estimation of resource requirements for HIA and how to obtain those resources to carry-out HIA (Regina Workshop)
- a good budgetary process should be recommended in the Handbook (Regina Workshop)
- the required Decision Making Process should be clearly given in the Handbook (Regina Workshop)
- it is imperative to provide clear information on how the current environmental assessment be changed to include broader Determinants of Health (Regina Workshop)

- there should be clear information on how to expand health role to broader Determinants of Health (Regina Workshop)
- there should be clear assessment framework to include health (Regina Workshop)
- operational element should be made clear in the Handbook. ie. Tools on "Flow To" (Regina Workshop)
- operational aspects of health impact assessment should be provided (Regina Workshop)
- the Handbook should essentially incorporate a clear Analytical Process which is lacking presently in this Handbook (Ottawa Workshop)
- tools are needed to carry-out health impact assessment. Eg. Checklists etc. (Ottawa Workshop)
- conceptual issue should be reconsidered to provide information on "how to proceed in HIA implementation (Ottawa Workshop)
- needs advice on "how to carry through?" when a potential health problem is identified (Ottawa Workshop)
- need to address "when to use volume-3?" (Ottawa Workshop)
- need information in the Handbook on 'where the decision is finally made' (Halifax Workshop)
- HIA / EA strategies could be regionalised to increase applicability (Halifax workshop)
- social impacts need to be included (even if not hard science) (Halifax Workshop)

6.9 **SUGGESTIONS ON MITIGATION INFORMATION**

- mitigation plans should be incorporated in the Handbook (Regina Workshop)
- mitigation proposals should be included (Toronto Workshop)
- need information on mitigation options (Toronto Workshop)
- need more information on mitigation (Halifax Workshop)
- speak of emergency measures and preventive measures (Quebec City Workshop)
- possibility of following up on consequences for health (Quebec City Workshop)

6.10 **SUGGESTIONS MADE ON HUMAN RESOURCES INFORMATION**

- provide a list of experts to consult (Quebec City Workshop)
- what will be the availability of the competent authorities (public health directorate) for responding to requests from those responsible for impact studies (Quebec City Workshop)
- the roles & responsibilities of health professionals should be clearly stated (Halifax Workshop)
- define stakeholders (Vancouver Workshop)
- develop and implement training courses for health professionals (Vancouver Workshop)
- everybody's occupation need not be included (Vancouver Workshop)
- the roles and responsibilities of Health Authorities should be made clear in the

- Handbook (Toronto Workshop)
- the Handbook should provide the professionals with basic description of what they need to do and what they need to be looking for (Regina Workshop)
- additional information is required to know 'who starts this HIA process'; it is the governments at various levels or community leaders or others (Regina Workshop)
- it is important to provide the mandate for HIA professionals (Regina Workshop)
- it is very important to provide information in the Handbook regarding who is responsible for what, when and how (Regina Workshop)
- expectations of all participants of HIA should be clearly provided (Regina Workshop)
- remove health professionals from the equation and replace it with 'Idea Team' template that can deal with Determinants of Health (Regina Workshop)
- the Handbook could make sure that the proponents of HIA and Health Practitioners are clear on each others role (Toronto Workshop)

6.11 **DATABASE FOR HEALTH IMPACT ASSESSMENT**

- the information should be grouped under technical, social etc. for communication (Halifax Workshop)
- need more information on trade-offs (cost-benefits vs environmental health problems) (Halifax Workshop)
- the Handbook should be made to answer questions such as 'where do you go for further information?' ie. Sources of information should be provided in the Handbook (Halifax Workshop)
- include information to overcome perceptual barriers between disciplines (Vancouver Workshop)
- it may be useful to incorporate information for predictions (Toronto Workshop)
- take general information in a separate document or appendix (Regina Workshop)
- update information and references on an on-going basis (Regina Workshop)
- need to provide feedback on general themes from national consultations (Regina Workshop)
- the Handbook could provide information on the problem of bias in relation to HIA officers and how to avert such a problem (Regina Workshop)
- it is important to include many sets of data from different parts of the country (Regina Workshop)
- add an appendix for the source of information (Regina Workshop)
- it appears that volumes 2 & 3 relies heavily on a single set of data from a single source and this should be expanded to include all regions (Regina Workshop)
- there should be process for centralized database (Regina Workshop)

6.12 **REASSESSMENT OF THE NEED FOR DIFFERENT VOLUMES OF HANDBOOK**

- it is imperative to assess whether volume-3 is helpful or not (Toronto Workshop)
- the particular need for volume-3 is questionable (Toronto Workshop)
- volume-3 could be titled as 'back grounder' for health professionals (Toronto Workshop)
- need for volume-3 of the handbook should be assessed (Toronto Workshop)

6.13 **SUGGESTIONS MADE ON THE SPECIFIC CONTENTS AND FORMAT OF THE HANDBOOK**

- chapter-H, volume-3 could be revised to provide guidance on the application of occupational hygiene science and technology for health impact assessment and to delete the section on "Guidance on the Selection of an Occupational Hygiene Specialist" by referring specific web-sites for information on professional associations and their certification functions
- in the tables, talk about follow-up (frequency, type, dissemination of results, the indicators to be checked following the completion of the project) and create a column for this subject (Quebec City Workshop)
- provide a lexicon of the terms used (eg. Sustainable Development) (Quebec City Workshop)
- provide a control list, an analysis of chart or summary table as a daily work tool and keep the handbook as a reference (Quebec City Workshop)
- includes references to the BAPE (Quebec City Workshop)
- put the table on one page (Quebec City Workshop)
- indicate that the table is an overview, not a checklist (Quebec City Workshop)
- suggest to those responsible for small projects that they do only a small part of what is on the tables (Quebec City Workshop)
- clear definitions of all terms have to be included in the Handbook and in this respect, we suggest a "Glossary" (Ottawa Workshop)
- there is a need to provide definitions of terms (Ottawa Workshop)
- need another volume (may be a volume-4) for EA practitioners (please be brief to about 20 pages) (Ottawa Workshop)
- too much quantitative assessment gives the impression of more precision than really is and hence practical implications of all quantitative assessments should be presented in a holistic way (Ottawa Workshop)
- grids could be included in CEAA's training "Guide for EA Practitioners" (Ottawa Workshop)
- narrative before tables would be very helpful (Ottawa Workshop)
- an easy reference system is needed to obtain guidance from the Handbook (Ottawa Workshop)
- Handbook should provide information in situation such as if grid raises problem, How to follow up?, What is next?, Who next? (Ottawa Workshop)
- need to focus on subject matters which are helpful for EA practitioners (Ottawa Workshop)

- ethics materials buried in chapter-6 should be made clear (Ottawa Workshop)
- table of contents should be detail enough and clear enough to provide rapid information on any topic as and when required by HIA / EA practitioners (Ottawa Workshop)
- in volume-2, chapter-3, on page-24, what does it mean by "socio-sanitary objective" (Ottawa Workshop)
- in volume-2, chapter-3, page 24, How can you implement philosophical objectives (Ottawa Workshop)
- in volume-2, chapter-3, there is a need to make sure that uncertainty is taken into consideration while making decisions (apply to all EA) (Ottawa Workshop)
- in volume-2, chapter-3, figure-3.1 is not clear and it has to be made more clear for the audience to understand the contents (Ottawa Workshop)
- in volume-2, chapter-5, terminology used here is from the health field, but need other terminologies for workers in other fields (Ottawa Workshop)
- in volume-2, chapter-5, page-54 separates the man from his environment and this should be avoided (Ottawa Workshop)
- in volume-2, chapter-5, page-54 - for collective risk sub-topic - the wording is not clear and the wording has to be improved for clarity (Ottawa Workshop)
- in volume-2, chapter-6, can be presented as a stand alone (Ottawa Workshop)
- in volume-2, chapter-2, the title does not corresponds its contents and therefore it is important to match the title and the contents (Ottawa Workshop)
- in volume-2, chapter-2, section-2.3 should be on Health Impact assessment instead of Environmental Assessment (Ottawa Workshop)
- in volume-2, chapter-2, section 2.4.4 provides examples of when HIA should be considered, but additional criteria have to be provided (Ottawa Workshop)
- in volume-2, chapter-2, page-6, better wording should be provided for the definition of Strategic Environmental Assessment (Ottawa Workshop)
- in volume-2, chapter-3, figure-3.1 is not clear (suggestion is to take some lines out) (Ottawa Workshop)
- in volume-2, chapter-3, in the section-3.2, on the first paragraph, there is a negative reference to CCME and this must be taken out (Ottawa Workshop)
- in volume-2, chapter-3, figure-3.2 could be a chapter on itself (Ottawa Workshop)
- in volume-2, the whole chapter-3 may belong to volume-1 (Ottawa Workshop)
- in volume-2, chapter-4, in reference to the table in page-38, it is very important to show "how these technologies are useful for doing HIA" (Ottawa Workshop)
- in volume-2, chapter-4, this chapter could be a part of volume-3 (Ottawa Workshop)
- in volume-2, chapter-5, EA practitioners would not write notices, but very useful information on what goes into a notice (Ottawa Workshop)
- volume-2, chapter-5 is too prescriptive and hence needs more discretionary approaches (Ottawa Workshop)
- in volume-2, chapter-6, Credibility and Communication could be moved up-front in volume-2 and consider moving to volume-1 (Ottawa Workshop)
- in volume-2, appendix-1, identify sector on the top of each page (Ottawa Workshop)

Workshop)

- avoid bias in the use of words - Eg. Promotor vs. Proponent (Regina Workshop)
- need to avoid generalization in the Handbook (one example is page-62) (Regina Workshop)
- there is some confusion about definitions such as Environmental Assessment vs. Environmental Impact Assessment and this should be clarified (Regina Workshop)
- amount of data in the Handbook may cause "paralysis" and hence it is important to minimize the contents of Handbook (Regina Workshop)
- technical terms need to conform to those in a particular industry (Toronto Workshop)
- it is useful to provide distinction between Risk Assessment and Risk Management (Toronto Workshop)
- some chapters could be consolidated, eg. chapter-A and chapter-I, chapter-B and chapter-E, chapters in volume-2 (Toronto Workshop)
- bibliography should be comprehensive (Toronto Workshop)
- definitions of terms could be provided (Toronto Workshop)
- the title for chapter-5 does not correspond with contents (Toronto Workshop)
- it is useful to produce and distribute the Handbook in 3-hole punched format (Toronto Workshop)
- in chapter-H, referencing or implying a specific agency such as 'Ministry of Labour'- MOL etc. must be avoided. The use of terms such as 'Labour, Health and Safety Agency' is appropriate (Toronto Workshop)
- discussions in the Handbook should make references to examples (Toronto Workshop)
- definitions of terms used in the Handbook should be defined (Toronto Workshop)
- it is important to provide information on the social impacts of health (Toronto Workshop)
- index to appendix-1 with individual sectors available as a pamphlet instead of one huge volume and cross referencing (Vancouver Workshop)
- the pamphlets could be stored in electronic catalogue and downloadable individually (Vancouver Workshop)
- tables in appendix-1 could be cross-referenced to the text with electronic regular updates of tables every six months (Vancouver Workshop)
- both content and style of chapters A, B, E, F & G could be further improved (Vancouver Workshop)
- chapter-G can also talk about what can go wrong with statistical analysis (Vancouver Workshop)
- should maintain high level of discussion eg. cyanide section (Vancouver Workshop)
- should be able to find any Topic Index for more detailed science (Vancouver Workshop)
- should look at CSA standard as a model / framework (Vancouver Workshop)
- chapters look like thesis papers and this should be avoided (Vancouver

- Workshop)
- should identify authors of different chapters (Vancouver Workshop)
- it is important to relate volume-3 to practical issues (Vancouver Workshop)
- the handbook does not address institutional barriers that prevent the right expertise being applied (Vancouver Workshop)
- it is useful to incorporate broad enough range of contributors (Vancouver Workshop)
- check volume-1, appendix- A1, second paragraph, last sentence and make sure that the statement is not in odd with EA literature (Vancouver Workshop)

6.14 **GENERAL SUGGESTIONS FOR THE WHOLE HANDBOOK**

- titles do not match contents in many sections and hence appropriate titles should be selected according to the nature of contents (Ottawa Workshop)
- language too academic and hence the language should be made more appropriate for the chosen audience (Ottawa Workshop)
- very long document and should be shortened as much as possible (Ottawa Workshop)
- titles in the Handbook should be more along "Guidelines" (Ottawa Workshop)
- Sustainable Development is interesting, but not pertinent to HIA / EA practitioners. It is more appropriate to move this section to volume-1 (Ottawa Workshop)
- need to focus on subject matters which are helpful for EA practitioners (Ottawa Workshop)
- follow general EA process in the layout of chapters (Ottawa Workshop)
- need to include a "Quick reference Guide" so that it may be possible to avoid reading the whole Handbook every time (Regina Workshop)
- it is important for the Handbook to include different phases of project (Toronto Workshop)
- volumes need to be based on generally accepted principles (Vancouver Workshop)
- amount of materials is daunting and somewhat repetitious between volumes and this should be avoided (Vancouver Workshop)
- information on the separation of EA and SEA (Strategic Environmental Assessment) should be provided (Vancouver Workshop)
- should provide information on how to link volume-3 with volume-2 (Vancouver Workshop)
- relate this Handbook to 'Rapid Environmental Health Assessment Guidelines' (Vancouver Workshop)
- the Handbook looks like more of a textbook instead of a handy handbook for quick reference and hence the Handbook should be simplified (Halifax Workshop)
- identify between medium-term and long-term effects (Quebec City Workshop)
- it would be useful to create summary documents that are more concise for

- managers (Quebec City Workshop)
- watch the language used in the handbook (Regina Workshop)
- materials in this document should be further improved (Vancouver Workshop)
- it is important to make sure that the Handbook is adequate enough to cover all intended users (Vancouver Workshop)
- the materials in this document could be made more concise (Vancouver Workshop)
- the Handbook could be made more current (Vancouver Workshop)
- move Sustainable Development chapter (the 'what' materials) to an appendix (Vancouver Workshop)
- make provision for the downloading of individual chapters (Vancouver Workshop)
- it is very important that the Handbook is made to provide information on the common environmental health concerns in Canada (Toronto Workshop)
- some theoretical areas can be included as 'background materials' (Vancouver Workshop)
- need a way to capture and make available updated and new relevant information and studies (Vancouver Workshop)
- analyze the impacts of not doing anything (Regina Workshop)
- need to have additional information regarding the use of this Handbook for First Nations (Regina Workshop)
- need to overcome the barrier of awareness prior to the use of this Handbook (Regina Workshop)
- database development and management regarding HIA should consider the questions such as who would own?, who would look after?, who would maintain? (Regina Workshop)
- it could be better if EA Practitioners and Health Practitioners participate in the re-writing of this Handbook (Toronto Workshop)
- when downloading the Handbook, the symbols do not always transcribe properly (use pdf) (Toronto Workshop)
- peer review would be good for each topic (Toronto Workshop)

6.15 **ESTABLISH THE NEED FOR HEALTH IMPACT ASSESSMENT FOR A GIVEN PROJECT OR PROGRAM OR POLICY STATEMENT**

- need information in the Handbook on 'when HIA tool should be used and when should not used' (Ottawa Workshop)
- in volume-2, chapter-2, need a general method to decide when to do HIA (Ottawa Workshop)
- need a trigger mechanism for HIA and EA (Regina Workshop)

6.16 **THE DETERMINANTS OF HEALTH IN THE HANDBOOK**

- Determinants of Health are from Different Sectors and hence there may a need for many different professionals (Regina Workshop)
- add two new Determinants of Health; gender and culture (Halifax Workshop)
- require information in the Handbook on 'how to priorities the Determinants of Health' (Halifax Workshop)

6.17 **SUGGESTIONS FOR THE PROMOTION OF HIA HANDBOOK**

- promote the handbook more and present them more to health and environmental assessment practitioners (Quebec City Workshop)
- make the PowerPoint presentation available on an official website (Quebec City Workshop)
- provide an "access plan" in the handbook, a key of few pages at the beginning to facilitate consultation (Quebec City Workshop)

CHAPTER - 7
SUGGESTIONS MADE BY THE PARTICIPANTS
REGARDING THE IMPROVEMENTS OF PRESENTATIONS ON
SECTORS (APPENDIX-1, VOLUME-2)
=====

During the second breakout session of the workshops, participants at all workshops except Ottawa, were asked to provide their suggestions for the improvement on all sectors contained in Appendix-1, volume-2 of the handbook. Responses of participants were recorded as listed next:

7.1 AGRICULTURE

- Quebec experience in agricultural sector could be broaden to include other regions such as prairie (Regina Workshop)
- need to address different agricultural enterprises beyond intensive livestock operations (Regina Workshop)
- need to address the cumulative effects of all rural enterprises on rural communities through community assessment (Regina Workshop)
- on grids in page 162, add the following 2 columns; a column for provincial standards and a column for occupational health hazards with links to community health (Regina Workshop)
- comprehensive database for this sector could enhance analysis (Regina Workshop)
- need to provide main steps of the HIA process using Determinants of Health (Regina Workshop)
- need to incorporate the activities of multi-disciplinary EA team in relation to agricultural sector (Regina Workshop)
- relate agriculture to human health (Toronto Workshop)
- charts could be simplified (Toronto Workshop)
- provide major issues of this sector (Toronto Workshop)
- a good effort is given for the analysis of hog farming in the Handbook and this could be extended for other farm enterprises (Halifax Workshop)
- benefits and risks of pesticides use should be analyzed (Halifax Workshop)
- injuries in agriculture sector could be included (Halifax Workshop)
- on-farm assessment of environmental impacts could have been included (Halifax Workshop)
- health / environmental issues of composting should be studied (Halifax Workshop)
- disposal of dead farm animals is a significant issue which should be addressed in

- the Handbook (Halifax Workshop)
- could explore the possibility of incorporating the effects on consumers of genetically modified foods (Vancouver Workshop)
- issues related to strategic environmental assessment vs. local environmental assessment could be included (Vancouver Workshop)
- more attention could be provided to agricultural activities on the land. Eg. Sumas prairie - fertilizers (Vancouver Workshop)
- cross referencing of related concerns between sectors (Vancouver Workshop)

7.2 **FORESTRY**

- it is helpful to provide impacts of pesticide use in forest lands (Regina Workshop)
- need to analyze the forestry management practice which uses only one specie of tree in terms of the impact of this practice on bio-diversity (Regina Workshop)
- analyze the impacts of clear-cutting of forests (Regina Workshop)
- analyze the environmental impacts of new forestry technologies (Regina Workshop)
- need to consider health risks such as encephalitis, west nile fever, lyme disease (Toronto Workshop)
- general lack of information on occupational health and safety for forestry sector (Vancouver Workshop)
- listing of typical forestry activities could be included especially those with potential critical impacts (Vancouver Workshop)
- two case studies noted are good (Vancouver Workshop)
- would like to see more case studies such as Tree Planting / Replanting, Road building etc. (Vancouver Workshop)
- could provide impacts from all facets of the sector (Vancouver Workshop)

7.3 **MINING**

- more detail information than given in volume 2 can be useful (Regina Workshop)
- major rewrite is recommended due to inaccuracies (Toronto Workshop)
- resource efficiency could be included (Toronto Workshop)
- proper use of terms should be adopted (Toronto Workshop)
- expand the number of examples in this sector (Toronto Workshop)
- accidents in mining could be included (Toronto Workshop)
- expand the sources of information by checking the organizations such as Mining Association of Canada, Ontario Mining Association and International Councils (Toronto Workshop)
- level of detail should connect to target audience (Vancouver Workshop)

7.4 **ENERGY**

- more hydrological analysis of hydro-electric dam is required (Regina Workshop)
- down-stream impacts of hydroelectric dam must be provided. The issues can include dam releasing low quality water, turbidity, temperature changes etc. (Regina Workshop)
- need to look at health risks from energy sector and mitigation of health problems (Regina Workshop)
- include positive health impacts from energy sector (Regina Workshop)
- both positive and negative impacts of co-generation power stations should be analyzed (Regina Workshop)
- emergence of new technology needs to be considered for the analysis (Regina Workshop)
- include impacts of hydroelectric dam projects on issues such as the fish population for communities depend on fish, the trappers who depend on animals, costs to replace the loss of resources etc. (Regina Workshop)
- audible noise section is good (Toronto Workshop)
- make all descriptions very generic (Toronto Workshop)
- describe the characteristics and life cycles of power lines (Toronto Workshop)
- there is a question on the relevancy of the "Energy use in Quebec" Section (Vancouver Workshop)
- too much focus on PAC RIM, but it is not a common project (Vancouver Workshop).
- not much on pipelines (it is buried in PAC RIM) (Vancouver Workshop)
- this exercise should be an identification of issues, not projects (Vancouver workshop)
- it is too descriptive and not inclusive (Vancouver Workshop)

7.5 TRANSPORTATION / COMMUNICATION

- it is useful to note that the Airport Authorities may fall outside of Federal and Provincial laws and regulations (Regina Workshop)
- it is useful to have discussion on the impacts of roads providing access to remote communities (Regina workshop)
- impacts of railroad abandonment on health could be provided (Regina Workshop)
- analyze health impacts of transportation in relation to distance to health facilities (Regina Workshop)
- include impacts of the increasing number of gas stations (Regina Workshop)
- standards given in page-105 may not be achievable (Toronto Workshop)
- standards given in page-105 do not appear to be human health related (Toronto workshop)
- narrative in this sector needs improvement (Toronto Workshop)
- if standards are presented, it is important to provide information on how to use the standards (Toronto Workshop)
- the Handbook does not provide information on all means of transport; only Roads & Highways are described (Toronto Workshop)

- impacts information in this sector does not cover areas such as storm water run-off etc. (Toronto Workshop)
- by looking at the way this sector is presented, there is a reason to think that this sector in the Handbook concentrates only on design, construction and operation phases, thus leaving out planning (Toronto workshop)
- impacts of transportation could be related to Quality of Life Indicators (Halifax workshop)
- analysis here could incorporate psychological impacts (Halifax workshop)
- transportation impacts on commerce should be analysed (Halifax Workshop)
- human health impacts of commercial towers could be studied with specific reference to construction and maintenance (Halifax Workshop)
- it is useful to study the impacts of routing trucks through towns (Halifax Workshop)
- transportation impacts should be related to Determinants of Health (Halifax Workshop)
- some treatments uneven (Vancouver Workshop)
- airport information not accurate regarding legislation (Vancouver Workshop)
- perhaps too much detail in matrix (Vancouver Workshop)
- health issues and contaminants of concern should be assessed without prejudging what the impacts will be (see pages 100 - 101) (Vancouver Workshop)
- not helpful to include the current science / policy on the issue as this will be a CEOH document and there are differences of opinion on the interpretation of the science (Vancouver workshop)
- revisit purpose and target audience (Vancouver workshop)

7.6 **WASTE MANAGEMENT / WASTE DISPOSAL**

- many comments under Agriculture Sector could be applied to this sector (Regina Workshop)
- it is useful to give more focus to bio-physical aspects of environment (Regina Workshop)
- relate potential impacts to Determinants of Health (Regina Workshop)
- include the consequence of doing nothing (Regina Workshop)
- add other factors that influence impacts eg.: proximity factor for odour (Regina Workshop)
- in page 179-180, add emergency response plan by owner (Regina Workshop)
- it is useful to provide overview of the sector with potential overlap between sectors (Regina Workshop)
- impacts of waste and byproduct should be established (Regina workshop)
- it is important to analyze the impacts of Land-Fill Sites (Regina Workshop)
- emphasize on health impacts of this sector (Toronto Workshop)
- political influence in waste management could be included (Toronto Workshop)
- key concept in page-175 (waste reduction, reuse, recycling and recovery) could be expanded to HOW? (Toronto Workshop)

- provide hazards of fire from waste storage (Toronto Workshop)
- range of waste management activities could be expanded (Toronto Workshop)
- it is useful to study the abandonment of industrial sites in relation to waste management eg. gas processing, distillation etc. (Halifax Workshop)
- risk assessment is required for Reduce, Recycle and Reuse of wastes (Halifax Workshop)
- it is essential to study the risks associated with on-site vs. off-site waste management (Halifax Workshop)
- good start, but more work to do on specific types of wastes and potential recycling (Vancouver Workshop)
- need to understand the cradle to grave aspects of waste management. ie. Life cycle of a landfill (Vancouver Workshop)
- routing of garbage to a landfill in relation to schools etc. need to be considered (Vancouver Workshop)
- identification of occupational hazards would be useful (Vancouver Workshop)

7.7 **SEWAGE / SLUDGE MANAGEMENT**

- include analysis of private sewage disposal systems in highly developed areas in context of new community project (Regina Workshop)
- need a trigger mechanism for HIA and EA (Regina Workshop)
- linkages of HIA process with other processes such as community development approval process (Regina Workshop)
- public health risks of sewage & sludge are not fully known and hence more studies should be conducted (Halifax Workshop)
- need to explore the linkages of sewage system with aquatic system and human health (Halifax Workshop)
- need to depict the impacts of raw sewage in terms of aesthetic values, odor and stigma (Halifax Workshop)
- it is important to analyze the impacts of various methods of sewage disposal such as dilution in harbor, sewage treatments, ocean dumping etc. (Halifax Workshop)
- there is a need to link politics of governments at different levels to human health (Halifax Workshop)
- what is the impact of doing nothing? (Halifax Workshop)
- it is essential to realize the moral and legal responsibility for sustainable environment (Halifax Workshop)
- a good start in the identification of impacts (Vancouver Workshop)
- the section on Public Health Risks (page-187) does not identify Public Health Risks (Vancouver Workshop)
- there are problems with headings (Vancouver Workshop)
- needs to focus on the identification of occupational hazards for workers (Vancouver Workshop)

7.8 **MANUFACTURING INDUSTRY**

- information under this sector is too basic and therefore more detail information is required (Regina Workshop)
- the process should be transparent and therefore it should be presented in an easy to understand format for the public (Regina Workshop)

7.9 **GENERIC IMPROVEMENTS SUGGESTED FOR ALL SECTORS**

- there is a need to develop and maintain health related field database for different sectors (Regina Workshop)
- need to confirm that all Acts and Regulations are on the website for all sectors (Regina Workshop)
- need to confirm that all standards in relation to all sectors are on the website (eg. standards on drinking water quality etc.) (Regina Workshop)
- standards and specifications for different hazards are missing in some sectors (Toronto Workshop)
- specific chemical hazards in different sectors are missing (Toronto Workshop)
- develop separate templates for different sectors (Toronto Workshop)
- text written under different sectors in the Handbook does not match the tables (Toronto Workshop)
- presentation could include alternate ways of presenting the facts in addition to charts (charts do not appear to do the job) (Toronto Workshop)
- an executive summary for different sectors may avoid difficulties of understanding HIA process (Toronto Workshop)
- the Handbook could provide a Checklist of items to be checked by Health Practitioners for different sectors (Toronto Workshop)
- update information to more current as possible date for all sectors (Toronto Workshop)
- sector analysis could incorporate Determinants of Health (Halifax Workshop)
- Legislation / Regulations for different sectors could be updated (Halifax Workshop)
- it is important to get maximum use from the provincial database on State of the Environment Reporting regarding sectors (Halifax Workshop)
- could use a pathway (exposure) breakdown and cross reference to sectors (dams may be constructed for several purposes and mercury is an issue regardless) (Vancouver Workshop)
- more references on information pertaining to sectors may be useful (Vancouver Workshop)
- should collaborate with Natural Resources Canada on mining sector - tap into indicators (Vancouver Workshop)
- analysis of different sectors is inadequate and therefore, it is suggested that the analysis of each sector should be further expanded to present all sectoral issues (Ottawa Workshop)

- Sector should be short as 5 to 10 pages to facilitate downloading (Vancouver Workshop)
- the information under sectors can be grouped under technical, social, economic etc. (Halifax Workshop)
- in volume-2, appendix-1, add a nuclear section under energy (Ottawa Workshop)
- in volume-2, appendix-1, add a section on infrastructure / buildings (Ottawa Workshop)
- inadequate analysis of sectors (many activities overlooked in this handbook) (Ottawa Workshop)
- difficult to identify which indicator is most important on sectors(eg. mercury or greenhouse effect) (Quebec Workshop)
- some sectors are not identified (eg. nuclear, biotechnologies etc.) (Quebec Workshop)

CHAPTER - 8
SUGGESTIONS MADE BY THE PARTICIPANTS IN ALL WORKSHOPS
REGARDING THE IMPROVEMENTS OF EXAMPLES GIVEN IN
APPENDIX-1, VOLUME-2

Participants at all workshops expressed their preferences pertaining to the presentations of examples in the handbook as listed next:

- discussion of projects under different sectors could exclude generic issues and this should be avoided (Ottawa Workshop)
- speak of other factors a little in addition to emissions (eg. deforestation, drinking water etc.) (Quebec City Workshop)
- distinguish systemic problems from those that occur occasionally (Quebec City Workshop)
- examples presented under agricultural sector and examples in other sectors do not make specific reference to Determinants of Health (Regina Workshop)
- only an overview is presented for examples under agricultural sector without much specifics in relation to HIA (Regina Workshop)
- agricultural examples and other examples should be clear with detail analysis, objectives, conclusions and recommendations in relation to Determinants of Health (Regina Workshop)
- in agricultural examples and other examples, there is a need to provide main steps of the HIA process using Determinants of Health (Regina Workshop)
- possible agricultural examples for HIA could include pesticide use, crop production, horticulture, fish farming etc. (Regina Workshop)
- apply grid (page-162) for more agricultural examples and examples in other sectors (Regina Workshop)
- include examples of successful HIA process for agricultural projects / programs and examples of other sectors (Regina Workshop)
- in addition to hog farming, expand the number of farm examples (Regina Workshop)

- example in agriculture is a good start, but more examples may be needed (Regina Workshop)
- examples could be more representative of all regions (Regina Workshop)
- it is useful to provide examples for uranium mines and potash mines (Regina Workshop)
- expand the number of examples in all sectors (Regina Workshop)
- pick more representative examples for all sectors (Vancouver Workshop)
- examples can be more representative of all regions (Vancouver Workshop)
- it is useful to walk through the steps of HIA process using an example (Regina Workshop)
- examples could be drawn from national and international projects (Toronto Workshop)
- provide analysis of municipal example and household example with tie to Determinants of Health (Regina Workshop)
- need to include HIA analysis of projects using many more examples (Regina Workshop)
- adopt a consistent format to all examples (Regina Workshop)
- social impacts need to be included for all examples even if not hard science (Halifax Workshop)
- Benefit / Cost Analysis of impacts for all examples would improve decision making (Halifax Workshop)
- monitoring and evaluation activities could be included for examples (Toronto Workshop)
- relate potential impacts of examples to Determinants of Health (Regina Workshop)
- give examples that take place elsewhere than in Quebec (Quebec City Workshop)
- provide a list of impact studies that have been already conducted (Quebec City Workshop)
- emphasis needs to be placed on tables, because it is the tables that will be used (Quebec City Workshop)
- more examples from other parts of the country needed in addition to QC (Ottawa Workshop)
- in volume-2, chapter-4, examples are not always clearly related to EA, but it is useful to establish the required relationships (Ottawa Workshop)
- in volume -2, appendix-1, the examples are not balanced from the national point of view and therefore examples from all regions should be included in the Handbook (Ottawa Workshop)
- in volume-2, appendix-1, examples overlook addressing mitigation and it is important to provide mitigation issues in the examples (Ottawa Workshop)
- in volume-2, appendix-1, examples do not cover broad enough range. This means, examples in widely different areas and issues should be provided (Ottawa Workshop)
- in volume-2, appendix-1, these examples do not deal with all issues and hence the number of examples could be increased (Ottawa Workshop)

- in volume-2, appendix-1, too frequent referencing to Quebec could be expanded to other regions of Canada (Ottawa Workshop)
- in the examples there should be clear analysis using Determinants of Health (Regina Workshop)
- examples could be made more comprehensive (Toronto Workshop)
- examples could be more national (Toronto Workshop)
- need a chapter with examples on HIA experience (Toronto Workshop)
- the Handbook is more theoretical and therefore it is imperative to provide information on the more practical aspects of Health Impact Assessment (Toronto Workshop)
- examples in the Handbook should adequately represent the Urban Centers in Canada (Toronto Workshop)
- inadequate details on some examples in the Handbook and hence complete information should be provided to all examples (Toronto Workshop)
- the examples in volume-2 should be comprehensive enough to cover all sectors (Toronto Workshop)
- the Handbook is too theoretical and hence more practical information have to be supplied using examples (Toronto Workshop)
- in volume-2, appendix-1, expand the number and types of projects in each sector (Ottawa Workshop)
- consequence of results from HIA / EA should be provided (Ottawa Workshop)
- more examples from other parts of the country are needed in addition to examples provided from Quebec (Ottawa Workshop)
- tables under different sectors and examples are difficult to use for HIA works (Quebec Workshop)
- examples in the handbook do not adequately represent the Urban Centers in Canada (Toronto Workshop)
- inadequate details on some examples in the handbook (Toronto Workshop)
- the examples in volume-2 are not comprehensive enough for all sectors (Toronto Workshop)
- in the examples (appendix-1, volume-2), there is no clear analysis using Determinants of Health (Regina Workshop)
- need to overcome the fear that EA might stop the project (Regina Workshop)
- impacts of off reserve projects on reserve and vice-versa (Regina Workshop)
- bioaccumulation and bioavailability are missing (Toronto Workshop)
- monitoring and evaluation activities are missing (Toronto Workshop)
- as in page-105, if there are spaces in the table, it is useful to provide foot notes explaining the reason / reasons for such spaces (Toronto Workshop)
- it is useful to have a consistent framework for all examples (Halifax Workshop)
- Benefit / Cost Analysis of impacts would improve decision making (Halifax Workshop)
- is Issue Matrix (page-49) a main tool? (Vancouver Workshop)
- are determinants of health missing in Issue Matrix? (Vancouver Workshop)
- it is important to analyze the **Loss of Culture and Social Values** due to projects

and programs. One example is hydroelectric dam projects (Regina Workshop)

APPENDIX - A
LISTS OF PARTICIPANTS AT REGIONAL WORKSHOPS
ON
CANADIAN HANDBOOK FOR HEALTH IMPACT ASSESSMENT

APPENDIX - A
PARTICIPANTS AT THE HALIFAX WORKSHOP ON
CANADIAN HANDBOOK FOR HEALTH IMPACT ASSESSMENT
WORKSHOP 5 OF 6, CITADEL HALIFAX HOTEL, HALIFAX,
NOVA SCOTIA, THURSDAY, JUNE 8, 2000
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Environmental Protection Branch
Saskatchewan Environment and Resource
Management

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Population Health Branch
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APPENDIX - C
SLIDE DECK PRESENTATION
"SETTING THE SCENE"

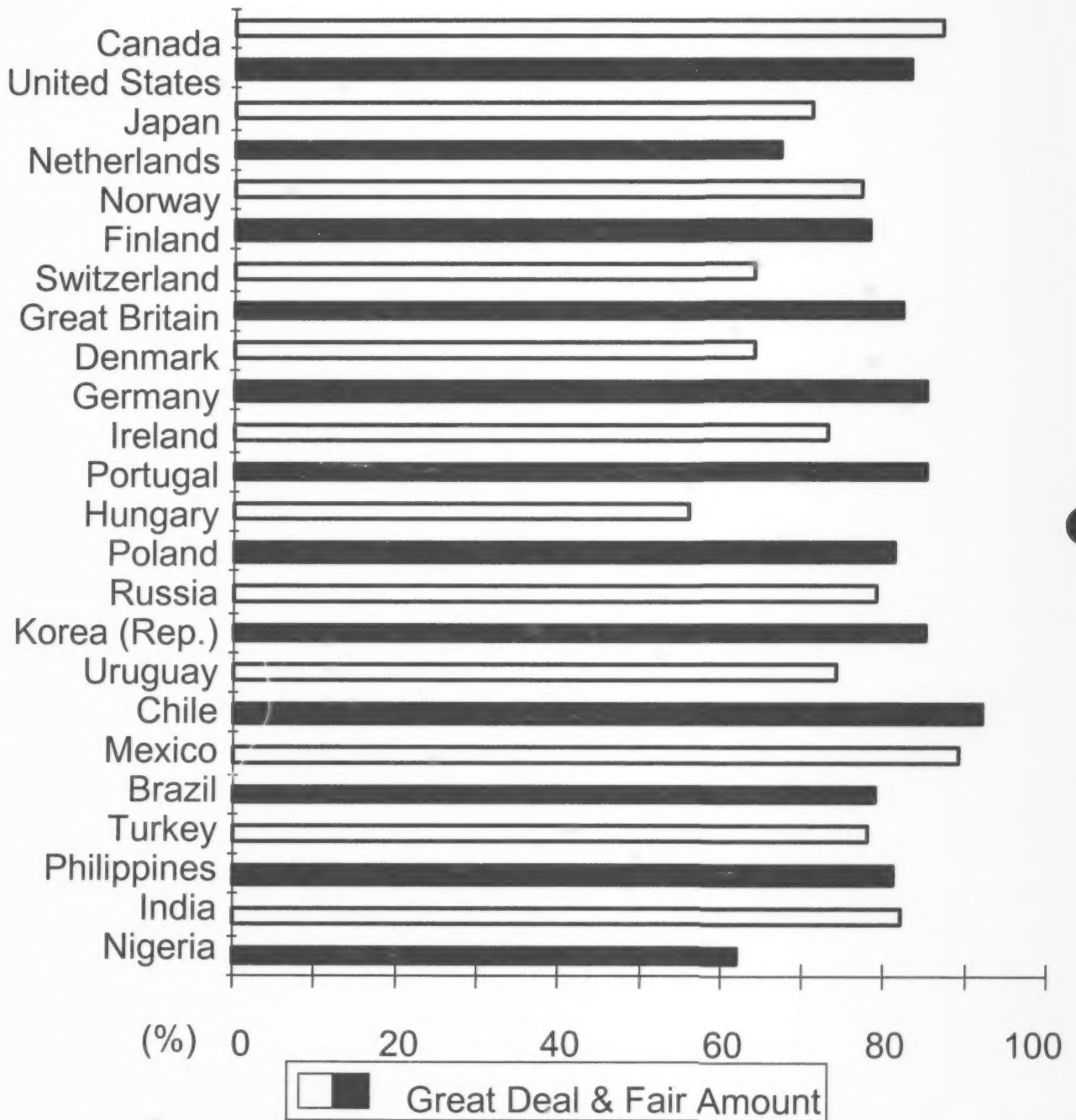
(Please see the other file attached to this e-mail for appendix-C)

Perceived Effect of Environmental Problems on Health - Now

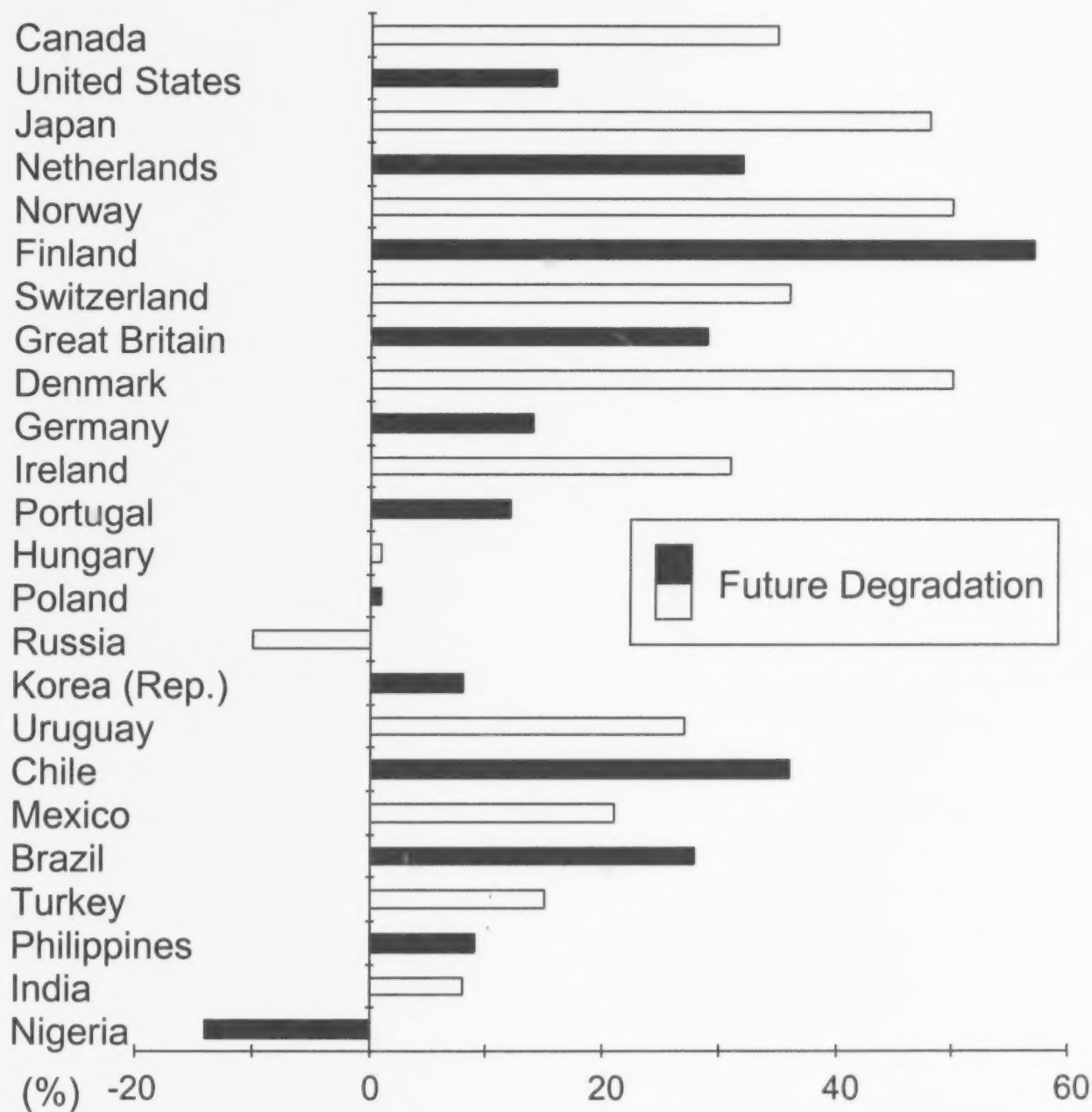


Environmental Monitor, 1996

Perceived Effect of Environmental Problems on Health - In 25 Years



Difference in the Perceived Effect of Environmental Problems on Health (Now Compared to 25 Years from Now)

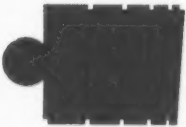


A review of the progress made
Internationally in EIA by the United
Nations Conference on Environment
and Development (UNCED) in 1997
expressly indicated that among the unmet
expectations within EIA was the lack of
incorporating health impacts within the
assessment of development projects.



The WORLD HEALTH ASSEMBLY,
the highest body of the WORLD
HEALTH ORGANIZATION (WHO),
has repeatedly expressed concerns in this
regard through a variety of reports and
official statements issued over the last 15
years.





FEDERAL-PROVINCIAL TASK FORCE ON HEALTH IMPACT ASSESSMENT

- **Health Canada**
- **Human Resources (formerly Labour Canada)**
- **Alberta Health**
- **Manitoba Environment**
- **Québec Health**
- **New Brunswick Health**

Develop National Guide on Health Assessment

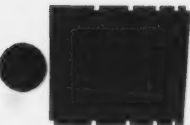
- Practical problems encountered by having health addressed in environmental assessment in the absence of any guidance, leading to inefficiencies, anxiety over risks and inconsistent decision-making.



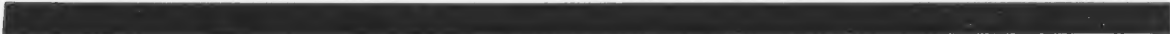
TASK FORCE'S MANDATE

- to provide advice, share information and foster communication among federal, provincial and territorial Agencies, Industry, Universities and Consultants on Health Impact Assessment (HIA);
- to encourage coordination and harmonization of approaches to HIA;
- to improve awareness of the linkages among environmental, socio-economic, cultural and human health effects; and
- to carry out workshops to address specific information exchange needs on HIA.





PRINCIPLES TO BE FOLLOWED BY THE TASK FORCE

- The World Health Organization's definition of health is accepted by the Task Force.
 - Environmental and human health are inextricably interlinked and therefore, HIA is an integral part of Environmental Assessment (EA).
 - A corner stone of HIA is the recognition of the need for public participation in the definition and scoping of human health concerns, and in decision-making.
 - HIA is required throughout the life cycle of the project (planning, construction, operation, decommissioning and follow-up monitoring) and takes into consideration occupational health and safety
 - Development of a scientific approach to HIA will focus efforts and diminish resource requirements, providing a fair, effective and efficient process of information gathering for decision-makers and the public.
 - Educational tools are required to promote or increase awareness of environmental/human health assessment, risk assessment and communication, and the linkages among environmental, social, economic, cultural and human health effects.
- 
- 



HUMAN HEALTH ASSESSMENT



Definitions:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

World Health Organization (WHO 1947)

the extent to which an individual or group is able, on the one hand, to realize aspirations and to satisfy needs, and on the other, to change or cope with the environment

World Health Organization (WHO 1984)

Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

U.N. Conference on Environment and Development, Rio de Janeiro (1992)



CHRONOLOGY OF EVENTS

- Sept. 92 Task Force Formed
- Mar. 94 1st Draft (Task Force)
- Sept. 94 2nd Draft (CEOH)
- Oct. 94 3rd Draft (translation, circulation)

1992						
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

- Sept. 95 Workshop Halifax
- Nov. 95 Workshop Winnipeg
- Nov. 95 Workshop Montreal
- Dec. 95 Workshop Toronto
- Jan. 96 Workshop Vancouver
- Mar. 96 Workshop Ottawa (federal government)
- Jun. 96 Workshop Proceedings Published

- Jan. 97 OAIA/QAIA Workshop: The Broader Dimensions of Environmental Health

- May 97 Canadian Guide to Health Impact Assessment Vol. 1: The Beginner's Guide
 - Basics about health
 - Basics about EA
 - Health Indicators
 - EA within a Canadian Context
 - Aboriginal Health & Traditional Knowledge
 - EA on an International Level
 - Forging Ahead



CHRONOLOGY OF EVENTS



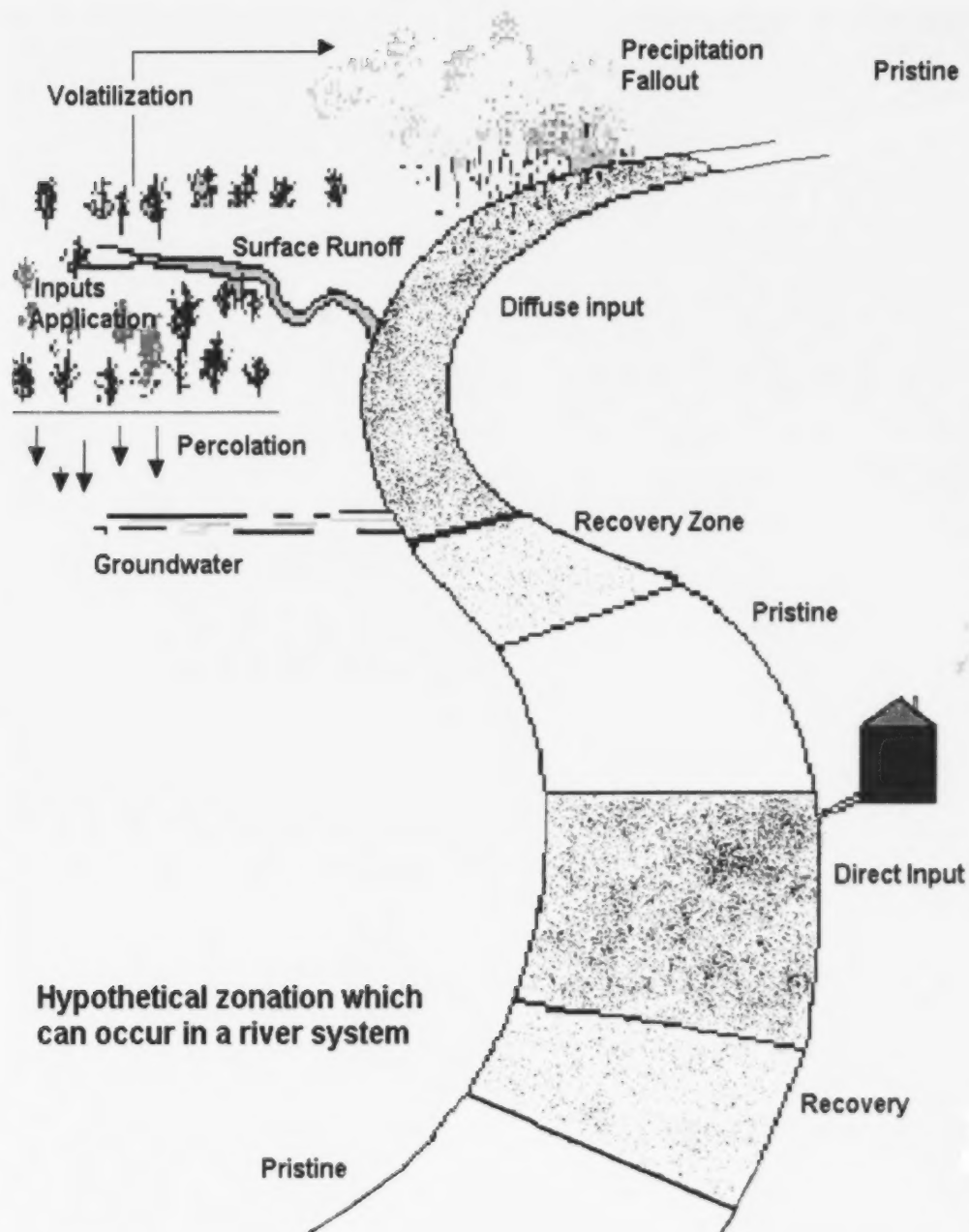
1992						
			1	2	3	4
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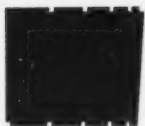
- May 97 International Study of the Effectiveness of EA
Report - Environmental Assessment and
Human Health: Perspectives, Approaches
and Future Directions
 - July 97 HC Web Sites:
- 

www.hwc.ca/dataehd/English/dgo/oeha
www.hwc.ca/dataehd/Francais/dgo/behm

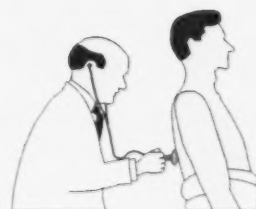
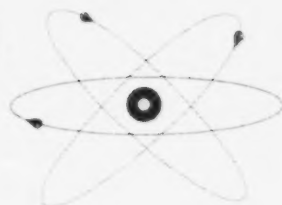


RIVER MONITORING





HEALTH DETERMINANTS



HEALTH DETERMINANTS

** • Income & Social Status



** • Physical Environment

** • Employment & Working Conditions

** • Education



* • Social & Family Support Networks

* • Personal Health Practices & Coping Skills

* • Healthy Child Development

* • Health Services

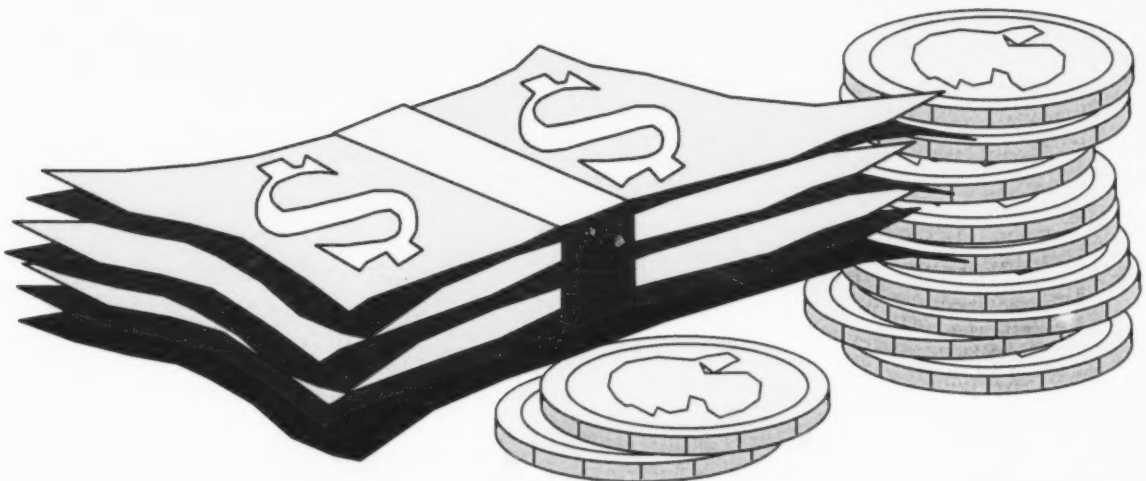
• Biological & Genetic Endowment

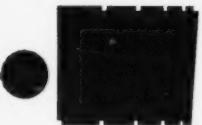




INCOME & SOCIAL STATUS

- Most important determinant of health
- More equitable distribution of wealth, the healthier the population
- Social status = better health
- Degree of control that one has





Landscape slide goes here -

Results of longitudinal studies of
rates of mortality among
unemployed people compared with
the general population

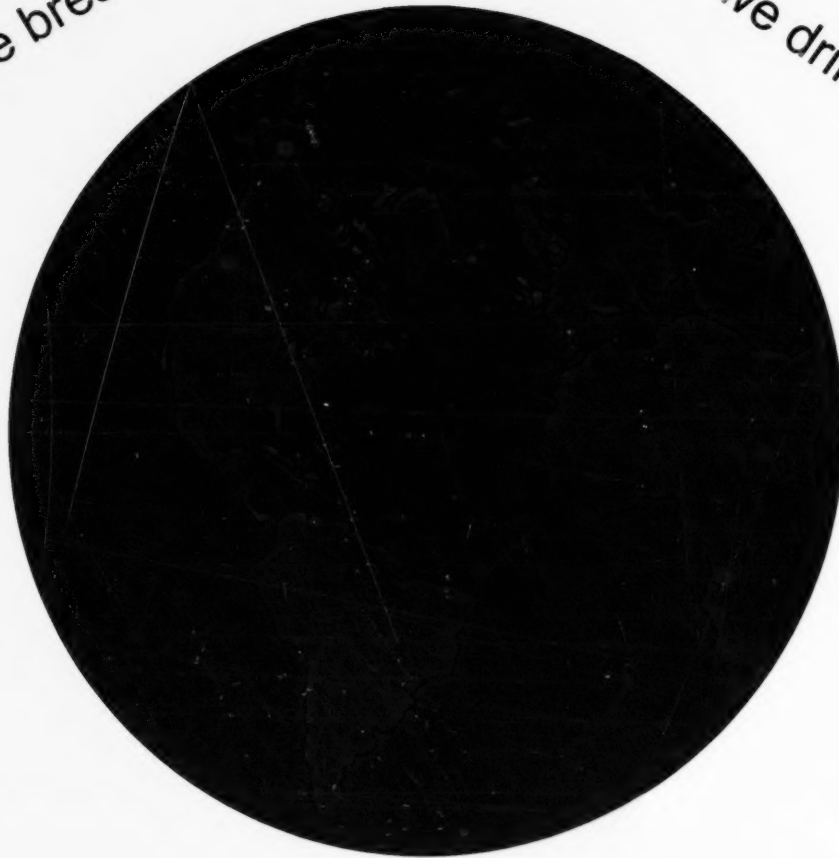




PHYSICAL ENVIRONMENT

Air we breathe

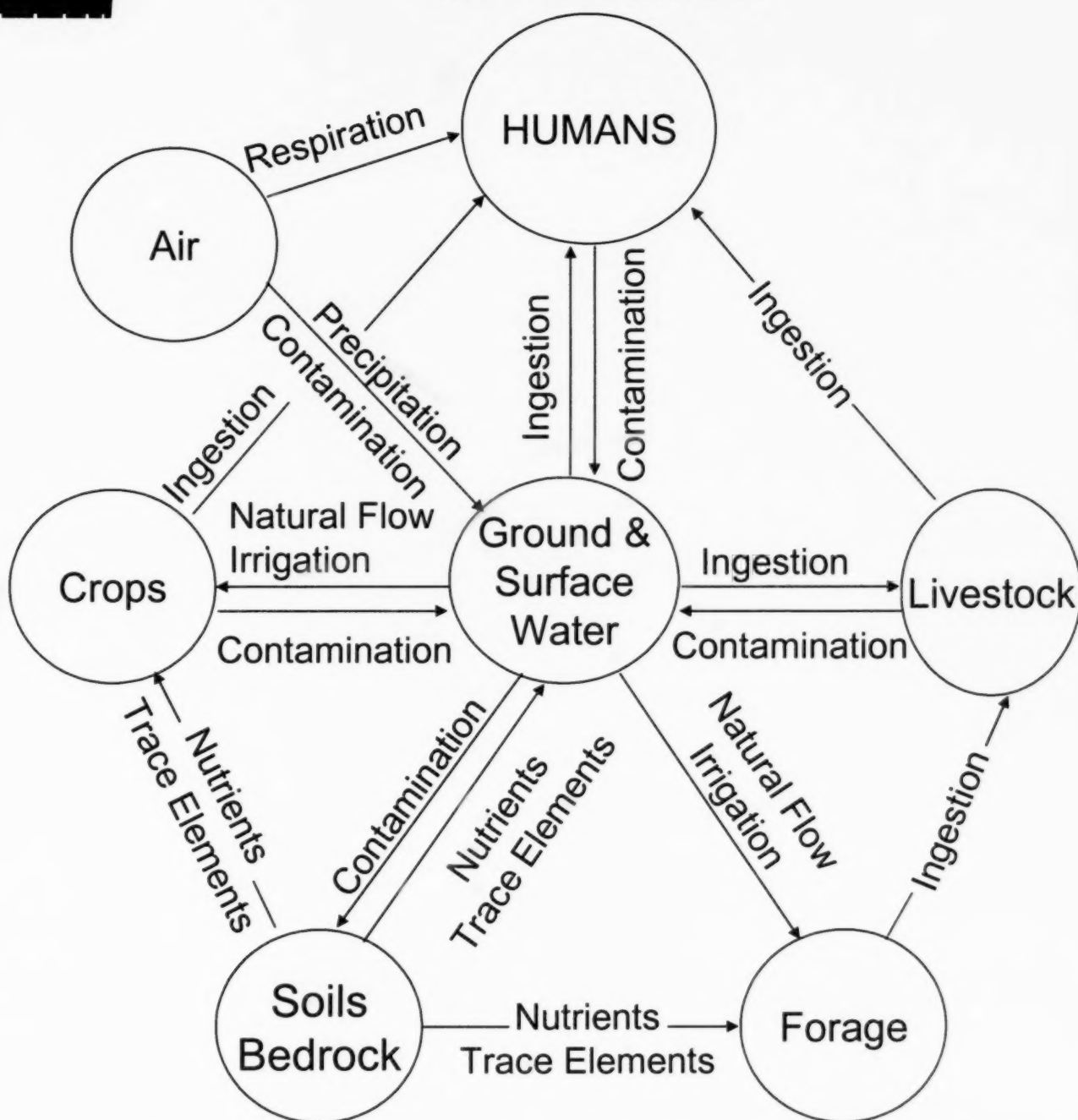
Water we drink



Food we eat



HUMAN LINKAGES TO THE ENVIRONMENT



Human linkage to the environment. All routes eventually lead to humans.

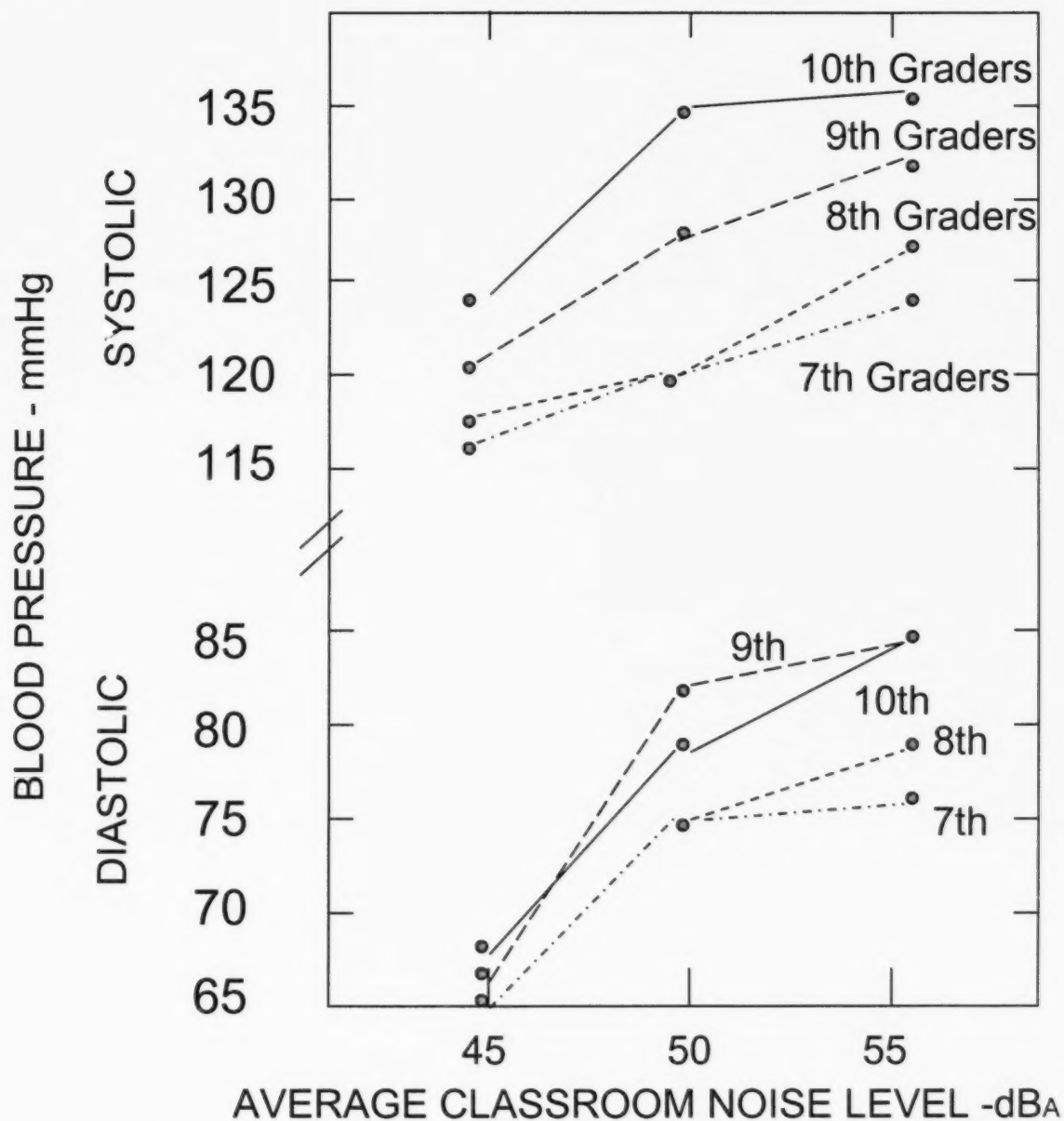


EMPLOYMENT & WORKING CONDITIONS

- More control over work and less stress = healthier
- Workplace social support
- Unemployment = poorer health
- Safe workplaces & injury prevention



Other Health Disorders Associated with Aircraft Noise



Blood pressure of students as a function of noise level of intruding street traffic noise. (From Karsdorf & Klappach, 1968)



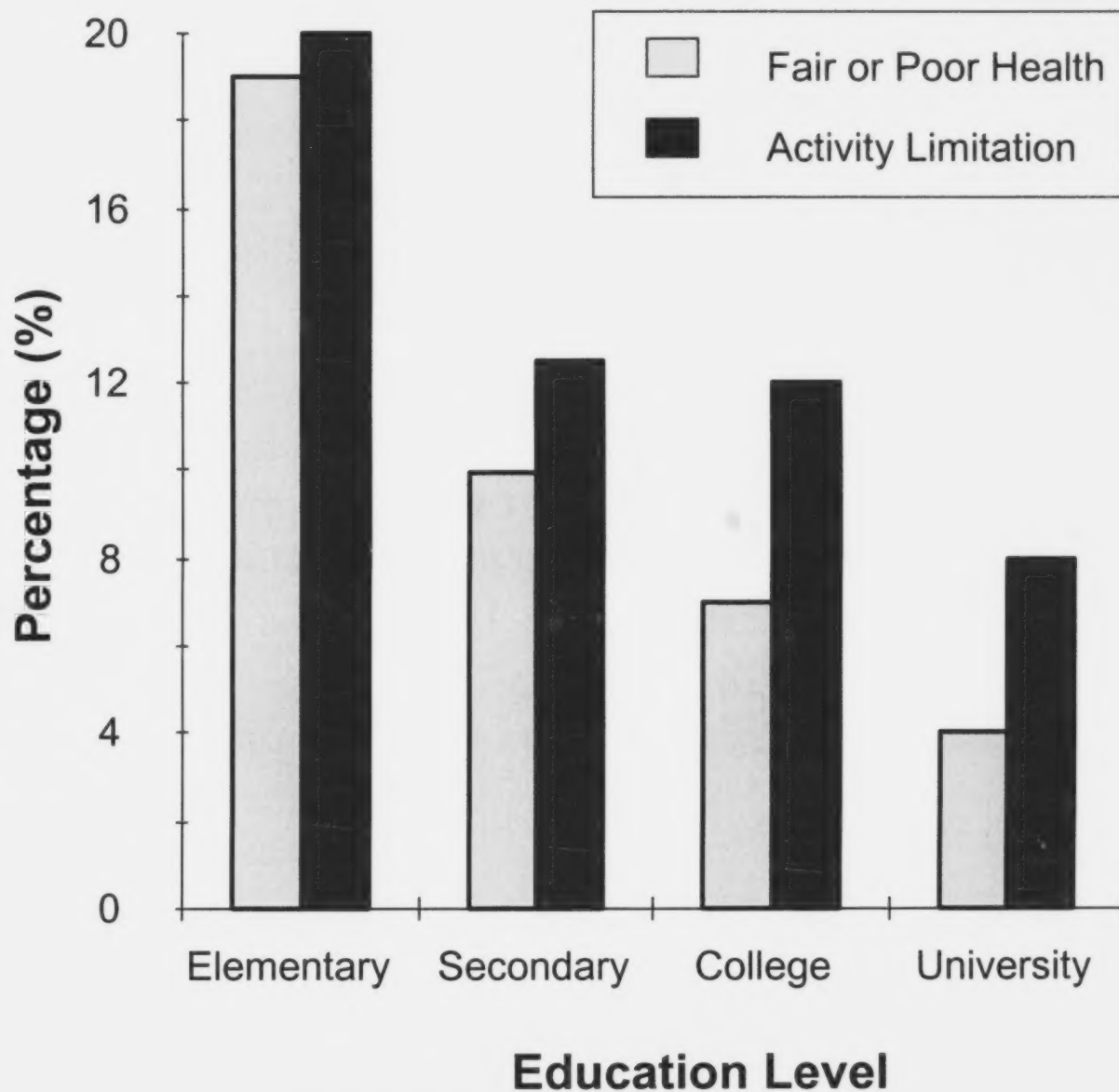
EDUCATION



- More education = better health
- More education = less absenteeism
- More education = socio-economic status
- Better sense of control
- Better information to stay healthy



**Percent of Canadians 15+ Years
Reporting Fair or Poor Health Status and
Activity Limitation, by Education Level**

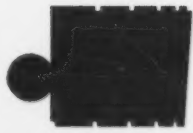




Social & Family Support Networks

- More social contacts = better health
- Married people live longer
- Family & friends help provide basics of food & shelter
- Need strong families, communities conducive to social interaction, less discrimination & social tolerance

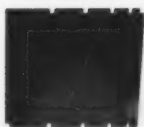




Personal Health Practices & Coping Skills

- Personal practices - smoking, alcohol, drugs, eating habits & physical activity
- Coping skills enable people to be self reliant, solve problems & make informed choices that enhance health





Healthy Child Development

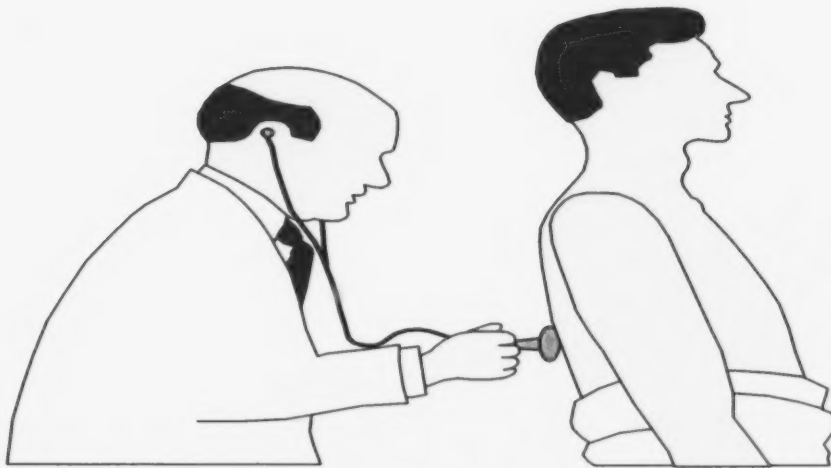


Effects of prenatal and early childhood experiences on subsequent health



HEALTH SERVICES

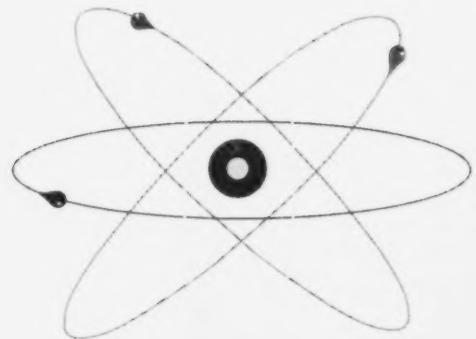
- Prenatal care & immunization
- Education on health risks & healthy choices to adopt healthy lifestyles
- More \$ on preventive & primary care SERVICES



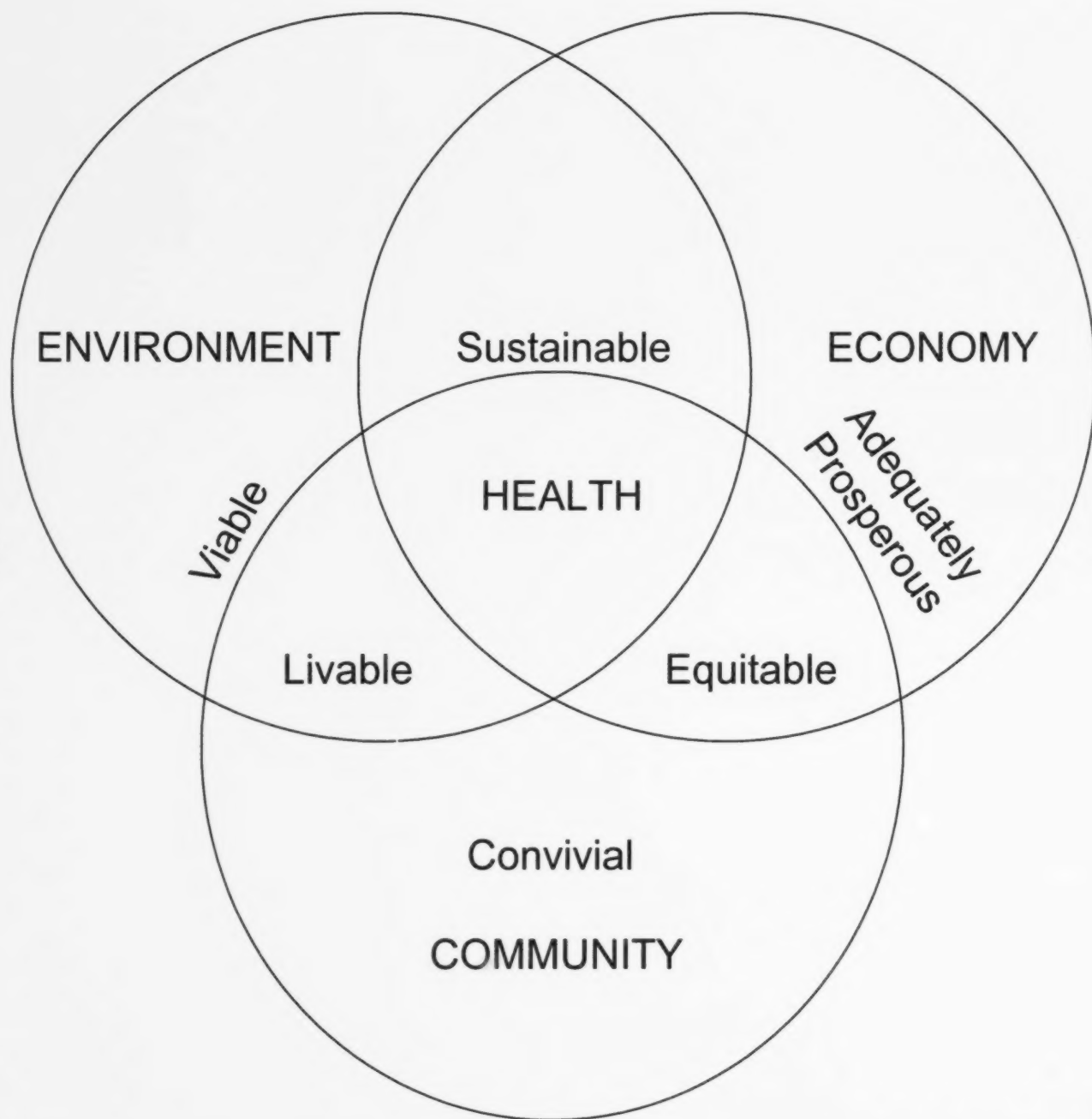


BIOLOGICAL & GENETIC ENDOWMENT

- Genetic endowment = predisposition to certain health problems
- Functioning of body systems (hormonal and immune)
- Processes of development and aging
- Biological differences in sex and socially constructed gender



THE ECOSYSTEM APPROACH



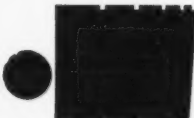


Labrador Inuit Health Commission (Labrador Inuit Association - LIA)

Development Issues (Voisey's Bay)

- Noise pollution
- Waste management
- Socio-economic-cultural stress
- Racism
- Assistance with finances and budgeting
- Families left with one or no parents (result of new employment opportunities)
- Social diseases
- Personal development, self-esteem and confidence
- Positive mental health





NWT DIAMONDS PROJECT

- BHP Diamonds Project the first major diamond mine in North America, started 1997.
- Five diamond-bearing kimberlite pipes would be mined in the NWT.
- Over the 25 year life of the project, approximately 133 million tonnes of ore and 826 million tonnes of waste will be mined.
- 6% of world market





NWT DIAMONDS PROJECT



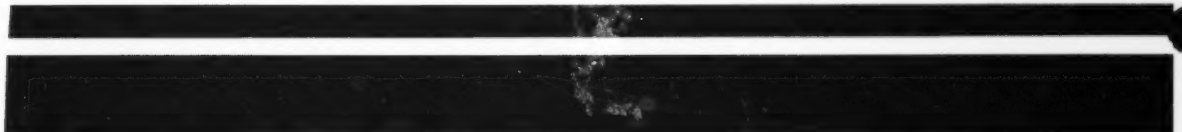
Broader Perspectives of Health in EA:

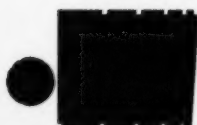
"In reviewing and assessing the Project's environmental and socio-economic effects, the Panel will give full and equal consideration to traditional knowledge"

Terms of Reference for NWT Diamonds Project



→Panel directed Proponent to determine how to incorporate traditional knowledge into the gathering of baseline information, impact prediction, and mitigation and monitoring plans.





BHP/Determinants of Health

Income & Social Status:

- 1000 jobs to develop the mines and about 650 jobs during production

Physical Environment:

- Compliance with all federal and provincial environmental standards
- Caribou and other wildlife protected

Education:

- Scholarship programs for aboriginal students
- Preferential hiring for aboriginals and site job training and relaxation of strict minimum educational employment standards



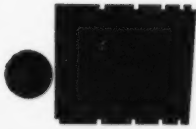


BHP/Determinants of Health



Social & Family Support Networks:

- Community meetings, open houses, cross-cultural training workshops
 - Direct community involvement through initiatives such as Community Mobilization, School Partnership and Education Scholarships
 - Two weeks on/two weeks off work schedule
 - Fly-in camp with no permanent road access to prevent major influx of new settlements to preserve traditional relationship with land
 - Certain residents to continue to live in their own villages and travel directly to the mine site, maintaining ties to family and community
- 



BHP/Determinants of Health

Personal Health Practices & Coping Skills:

- Community involvement to provide solutions to community problems (drug and alcohol abuse)

Health Services:

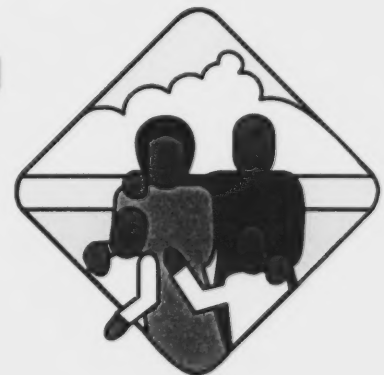
- Proponent to draw on project revenues to invest in the social and human-resource capital of the NWT

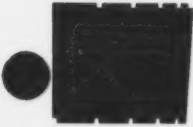




EMERGING ENVIRONMENTAL HEALTH ISSUES

1. Definition of Health
2. Cumulative Effects
Environment:
Watershed/Airshed/Region
Health
Biophysical/Lifestyle/SIA
3. Risk Perception
4. Community Involvement/
Empowerment in Decision
Making
5. Post EIS/HIA
Follow-up Monitoring
Surveillance
6. Training
7. Liability



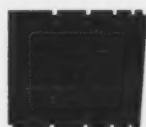


Purpose of Handbook on Health Impact Assessment

*to assist health professionals with
little or no knowledge in EA in
providing health advice to an EA
process*

● *tool for EA practitioners who are
not experts in health; for
proponents of projects and for
government*





A Canadian Health Impact Assessment Handbook



Vision

To create a world-class resource promoting the integration of health into the implementation of EA. That it be a living document, developed through consultation with concerned stakeholders (gov., industry, academia, aboriginals, NGOs and consultants).



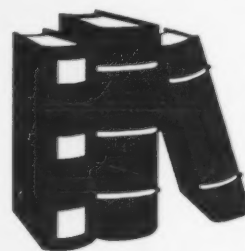


Volume 1: Canadian Handbook on Health Impact Assessment: The Basics

(What/Why)

Basics about health

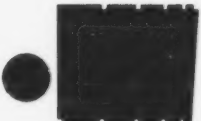
- Basics about EA
- Health indicators
- EA within a Canadian context
- Aboriginal health & traditional knowledge
- EA on an international level
- Next steps



Volume 2:
Decision Making in
Environmental Health
Impact Assessment (Draft)
(When/Where/How)

- Energy
- Transportation & Communication
- Forestry
- Mining
- Agriculture
- Waste Management
- Sewage Sludge Management
- Manufacturing Industries





Volume 3: The Role of the Health Practitioner (Draft)

(Who)

- Epidemiology
- Occupational Hygienist
- Risk Assessment/Risk Management
- Technological Risk Assessment
- Biostatistics
- Social Impacts/Public Consultation
- Public Health
- Economic Impacts
- Assessing Values





HANDBOOK SURVEY

– Notifications Sent Out

– Responses Location	Atl	4
	Qué	5
	Ont	4
	Central	4
	Pacific	1

Organization	Fed Gov 't	9
	Prov. Gov 't	1
	Mun. Gov 't	3
	Ind.	1
	Consultants	0
	Indigenous	1
	Un.	2
	NGO	2



HANDBOOK SURVEY

Challenges

Neutral

Somewhat
Signifincant

Significant

Lack of Scientific data			X
Identification of Issues			X
Lack of Methods			X
Lack of Resources			X
Appropriate Expertise		X	
Lack of Consistence P/F		X	
Public Consultation		X	
Working with Gov 't Depts.		X	
Working with Proponents		X	
Delays in Approval	X		

Solutions

%

Education & Training	30
Guidance Material	23
Research	18
Co-operation	18
Resources	10

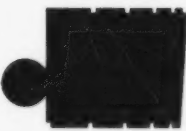


HANDBOOK SURVEY

Ratings	Excellent	Good	Average	Poor
Vol. 1	38	50	12	0
Vol. 2	29	57	14	0
Vol. 3				

Format	%
Web Site (PDF)	29
Hard Copy	57
CD Rom	0
Other	14





CONSULTATIONS

CEOH - HC

Ottawa	April 11
Vancouver	May 10
Regina	May 30
Québec	June 5
Halifax	June 8
Toronto	June 13

Multistake holder





TRAINING

→ Health Canada - Office of Environmental Health Assessment Web-Site

- <http://www.hc-sc.gc.ca/ehas-sehm>
 - Handbook
 - PowerPoint Slides

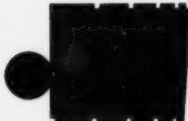
→ WHO Collaborating Centre on Environmental and Occupational HIA and Surveillance (Québec)

→ Distant Learning

- Laval/McMaster/Royal Roads

→ UNAMAZ/WHO EMRO





WEBSITE ADDRESSES

Health Canada:

- www.hc-sc.gc.ca (English and French)

Environmental Health Assessment
Services

- <http://www.hc-sc.gc.ca/ehas-sehm>



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